# G-Tape deck DM 4/0

Service
Service
Service

DM 4/2
DMP 4/0
DMP 4/2
DMS 4/2

# Service Manual

VHS

PAL/SECAM

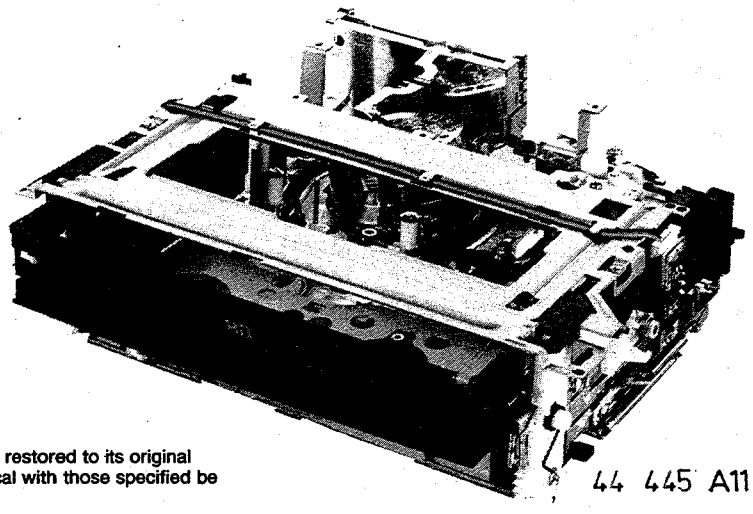
**DM 4/0** is a G–tape deck (DM=Deck Mechanism) with four video heads on the head disc, suitable for "perfect stil". Futhermore this tape–deck is suitable for "long play" and meets the half loading requirements.

**DM 4/2** is a G–tape deck (DM=Deck Mechanism) with four video and two audio heads on the head disc, suitable for "perfect stil" and FM audio. Futhermore this tape–deck is suitable for "long play" and meets the half loading requirements.

**DMP 4/0** is identical to the DM 4/0, however this tape–deck has been equiped with a different scanning unit.

**DMP 4/2** is identical to the DM 4/2, however this tape–deck has been equiped with a different scanning unit.

**DMS 4/2** is a G–tape deck (DMS=Deck mechanism S–VHS) with four video and two audio heads on the head disc, suitable for "perfect stil", FM audio and to record or play back video signals via the S–VHS system. Futhermore this tape–deck is suitable for "long play" and meets the half loading requirements.




Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne".

Subject to modification

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## INTRODUCTION

This Service Manual describes the mechanical adjustment procedures needed for properly adjusting the G–Tape Deck. Mechanical adjustment procedures needed for video recorders incorporating the G–Tape Deck are described in chapter 2 " Mechanical Adjustment Procedures".


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**Service Information**

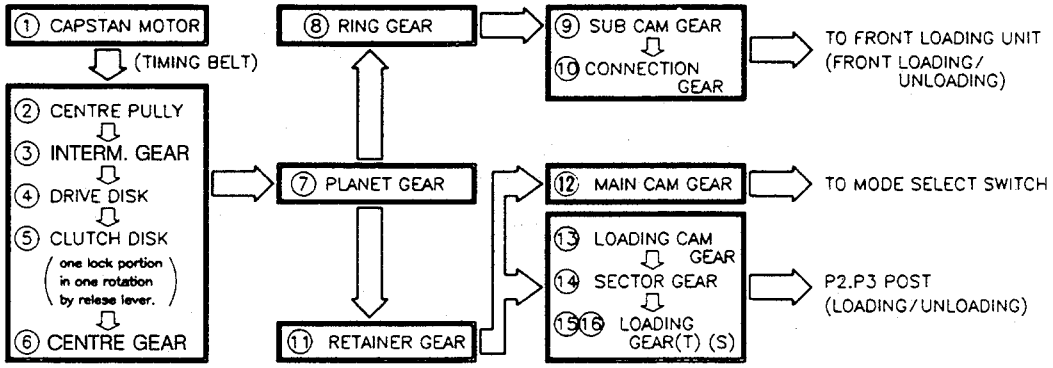
* VR86-16
* Service information included in this ducumentation.

## 1. SERVICE INFORMATION

### 1.1 The phase of G-tape deck

The capstan motor of the G–tape deck works as a loading (threading) motor and a front loading motor in a conventional tapedeck. This capstan motor controls all mechanical components of the G-tape deck.
Therefore the phase of the mechanical condition becomes very important. Pay much attention to the phase of the tape deck, when reinstall any components of the tape deck, refer to chapter 4.

Adjustment procedures, should be performed. even after installation of the cassette compartment.
The mechanical movement from the drive source (capstan motor) to all other main mechanical compontents is shown in following flow chart, see Fig. 1-1.
Fig 1-2 shows the loading movement direction.




※ Switching of Loading and Front Loading is performed by Detent Arm.

Fig. 1-1

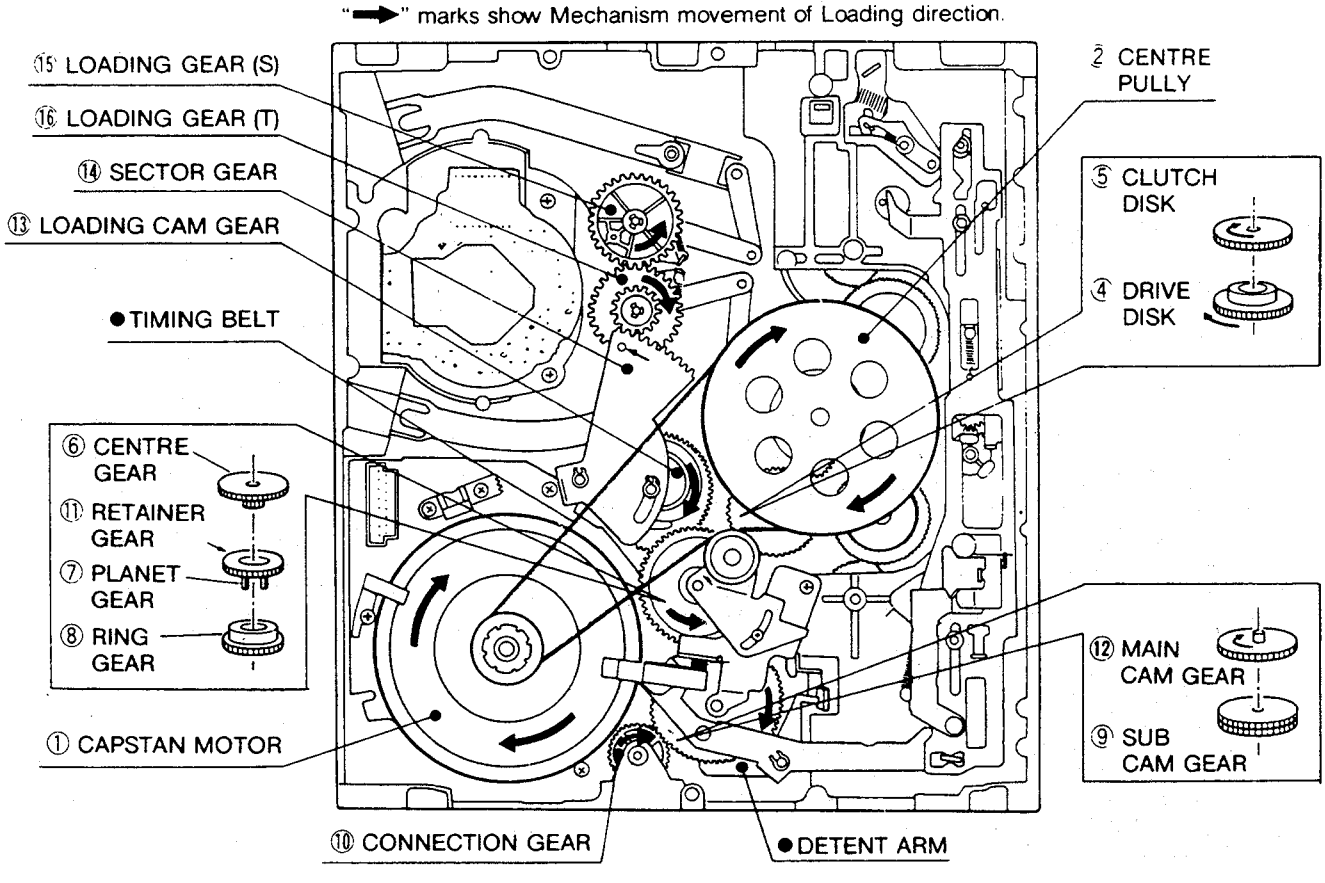



Fig. 1-2

### 1.2 How to eject manually

When the electrical circuit is defective and the unloading and front unloading section don't work properly, it is possible to eject manually as follows.

- Disconnect the mains supply.
- Release change lever pos. no 122(2) by pushing it to arrow mark direction as shown in Fig. 1-3.
- Slowly turn the capstan motor counter clockwise until the clutch disk is locked.
  (Clutch Disk is locked once in one rotation).
- Release the change lever again when the clutch disk is locked.
- Repeat points (2) and (3) until the cassette is ejected.

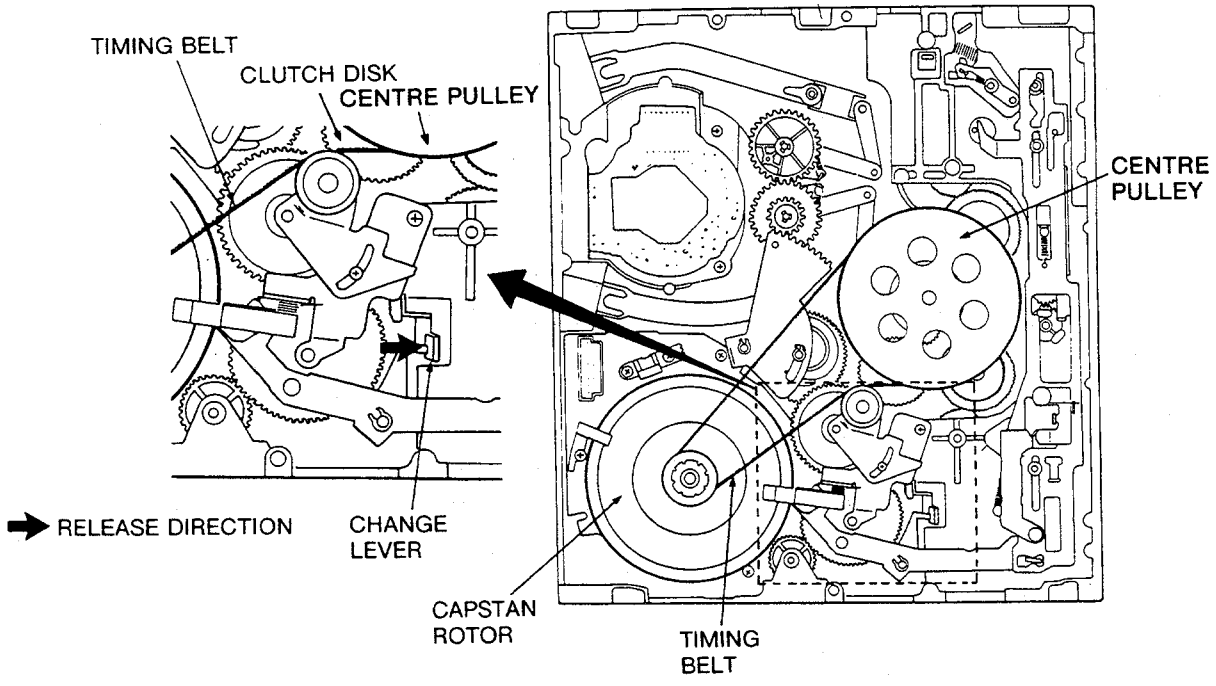



Fig. 1-3

### 1.3 How to place the Cassette compartment in the down condition without a cassette.

In the Cassette compartment up condition, the VCR can not be operated. To place the Cassette compartment in the down position without a cassette use the following procedure.

*Method 1*

- Remove the top case and front panel then, connect AC plug.
- First insert a ruler against the bottom right side of the cassette up unit so it lies over the cassette opener to keep it in the down condition as shown in Fig. 1-4.
- With the ruler in place, extend the left middle finger outside the cassette up unit to cover the hole in the cassette compartment top plate as shown in Fig. 1-4. while pressing the cassette holder unit into the loading condition with the left thumb.
- Hold the ruler and middle finger firmly in position until the cassette holder unit clears the locking tab of the side plate (L) and passes beyond the cassette reject slot of the side plate (R).
  After clearing the locking tab and the cassette reject slot, the cassette holder unit will move into the down position by itself.

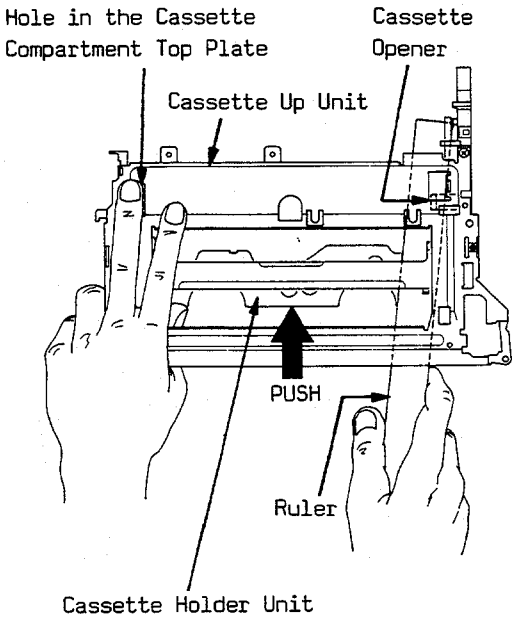



Fig. 1-4

*Method 2*

- Unplug the connector P1508 and remove the cassette compartment top plate by removing 2 screws (A) and screw (B), see Fig. 1-5.
- Remove the cassette holder unit by pushing wiper gear (R) pos. no. 232(3) unit until the 5 pins of cassette holder unit clear the slots of the side plates (L) and (R) as shown in Fig. 1-5.
- Connect AC plug.
- Push wiper gear (L) pos. no. 231(3) unit to place the unit in the cassette down condition (no cassette) as shown in Fig. 1-5.

*Note:*
If the cassette mechanism can not be placed in the casette-up condition when the EJECT button is pressed. First place finger through the hole in the left side of the chassis frame, as shown in box, Fig. 1-5, and push the wiper gear (L) unit up. Now push the EJECT button to EJECT.

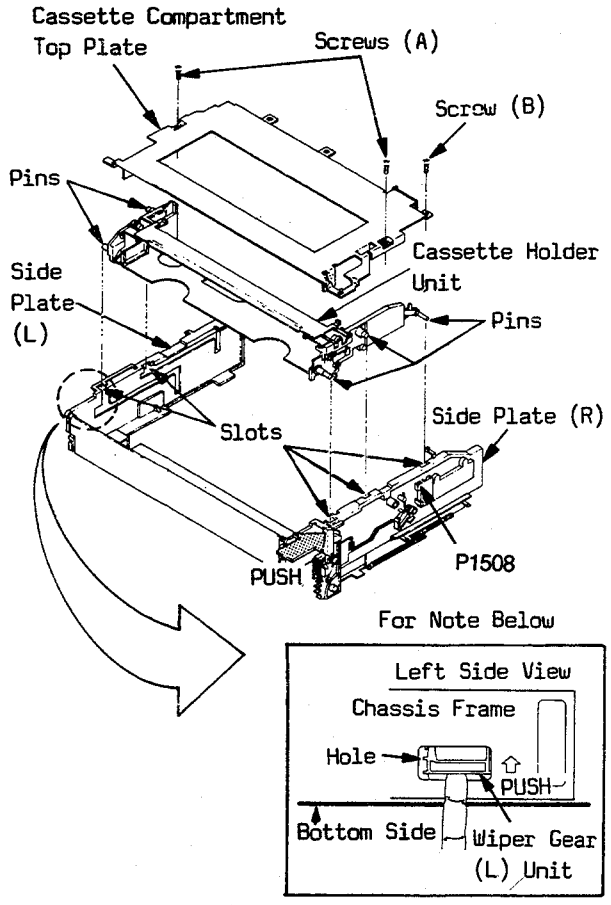



Fig. 1-5

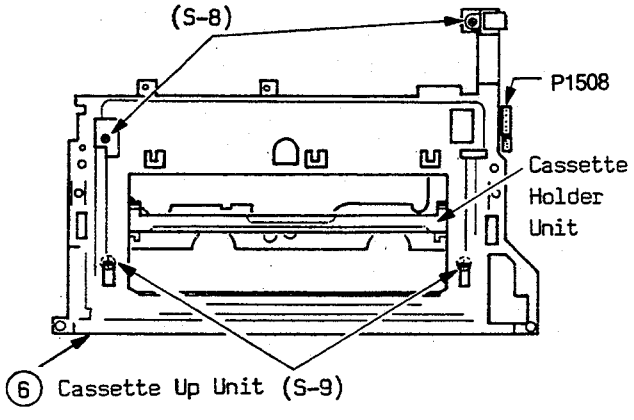



Fig. 1-6

**1.4 How to remove the cassette compartiment**

- Disconnect the mains supply
- Disconnect the plug from P1508
- Remove screws (S-8), see Fig. 1-6.
- Turn the capstan motor clockwise (located on the bottom side) until it will not turn any more.
- Now screws (S-9) can be removed. The complete cassette compartment can now be taken out.

**1.5 Movement of mechanism without cassette compartment**

Since the capstan motor works as a loading (threading) motor and front loading motor, phase relationship between cassette compartment and mechanism is important. Playback and FF/REW can not be performed after taking out the cassette compartment. However, checking the mechanical movement without cassette, it is possible as follows:

- Disconnect the mains supply.
- Take out the 5 pin flex cable from P1508 on the cassette compartment and remove the cassette compartment from chassis, see chapter 1.4.
- Turn the capstan motor clockwise until the clutch disk is locked. (Clutch disk is locked once in one rotation).
- Release the change lever again when the clutch disk is locked.
- Repeating above items will show the several stop positions of the mechanism from EJECT to PLAYBACK/REC, see also Fig. 1–7.
- Start from EJECT

1. Starting point for loading (threading).
2. Half loading position.
3. Main brake on (µC on deck control monitors the safety devices in the mechanism).
4. Soft brake on (WIND, REW position).
5. Pressure roller positioned.
6. Pressure roller fully down.
7. Pressure roller pressed to capstan shaft (PLAY, REC, CUE mode).

*Note:*
- Don't add too large torque to any gears to prevent breaking it
- When reinstalling the cassette compartment, refer to section 4.10. "Reinstallation of cassette compartment."
- It is not possible to opereate the mechanism from EJECT position.

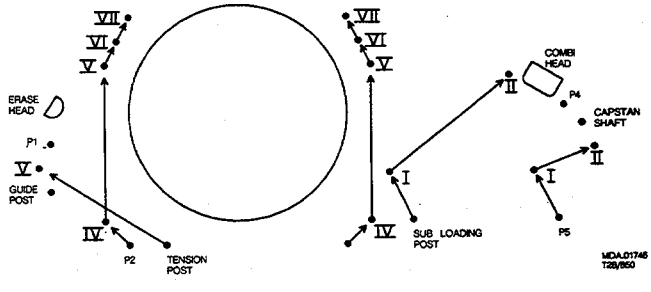



Fig. 1-7

### 1.6 Replacement of the scanning unit

*Note:*
Work with extreme care when removing or replacing scanning unit pos. no. 6(1), since there is very little clearance between scanning unit and chassis.
Do not touch the video head with bare hands during servicing.
Use nylon gloves (5322 395 94022).

- Place the set left side down.
- Remove grounding plate pos. no. 5(1) and the head amplifier, see Fig.1-8.
- Remove screws (B), see Fig. 1-9.
- Lift the scanning unit out of the chassis, and disconnect the plug from P1502.

*Note:*
When reinstalling the new scanning unit, fit the new scanning unit to the chassis by turning it clockwise. Confirm after reinstalling the scanning unit the "Gap position" adjustment, see the relevant service Manual.

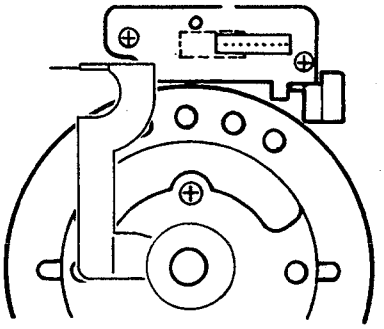



Fig. 1-8

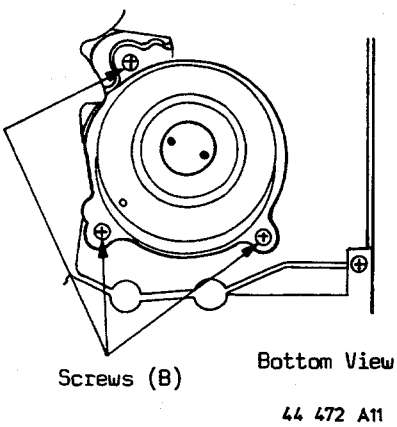



Fig. 1-9

### 1.7 Replacement of scanning unit (DMS 4/2)

Work with extreme care when removing or replacing the scanning unit. Do not touch the video heads during servicing.

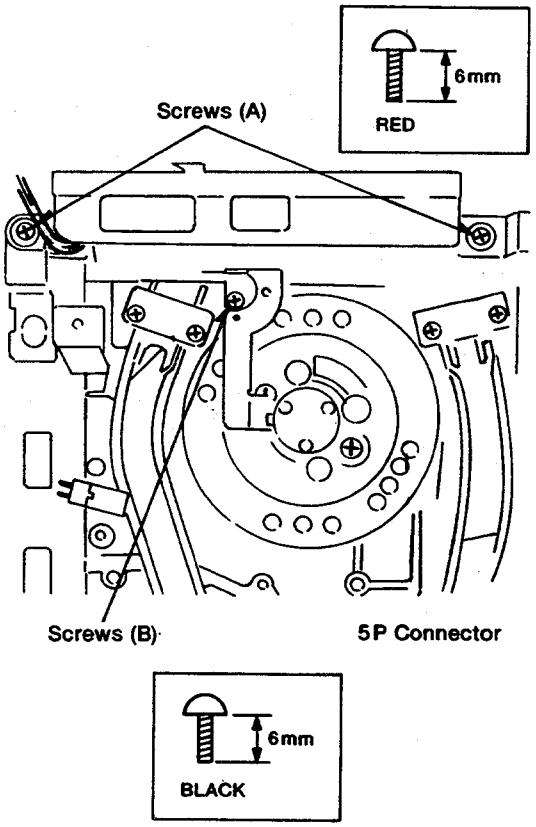



Fig. 1-10

- Remove screws (A) to take out the head amp, see Fig. 1-10.
- Remove screw (B) to take out the earth holder.
- Disconnect the 5P connector on the cylinder drive CBA.
- Remove the 3 screws (C) to take out the scanning unit (with the cylinder drive CBA) see Fig. 1-11.

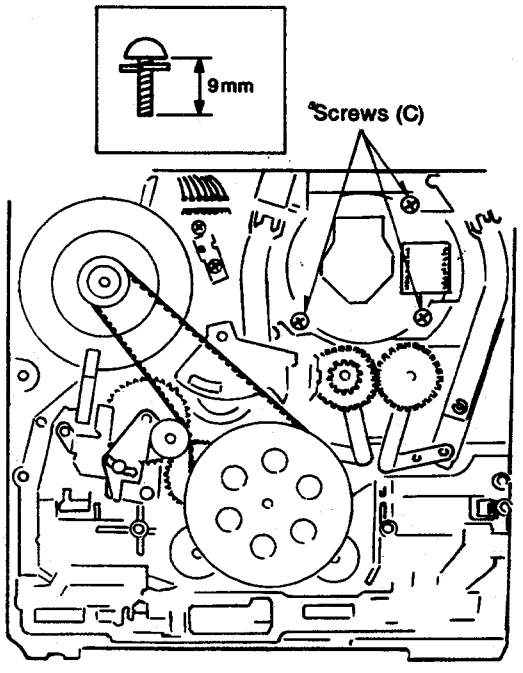



Fig. 1-11

note:
Since there is very little clearance between the scanning unit and the chassis, remove the scanning unit gently and carefully.

- Reinstall the new scanning unit, tighten the screws (C) and reinstall the earth holder with screw (B).
- Reconnect the head amplifier and 5P connector and tighten screws (A).

note:
After replacement, confirm the performance.
If any further maintenance is required, perform the nominal tape path adjustments (see chapter 2.8) and the 'Gap position' adjustment, see the relevant manual.

**1.8 Replacement of the cylinder drive CBA (DMS 4/2)**

- Remove the scanning unit refer to chapter 1.7.
- Place the scanning unit upside down.
- Unsolder the soldered portion (E) for shield case to take it out, see Fig. 1-12.
- Unsolder the soldered portion (D) indicated by an arrow mark (including the soldered portion inside the shield case).
- Remove screws (F) to remove the cylinder drive CBA.
- Reinstalling is the reverse way of above mentioned procedure.

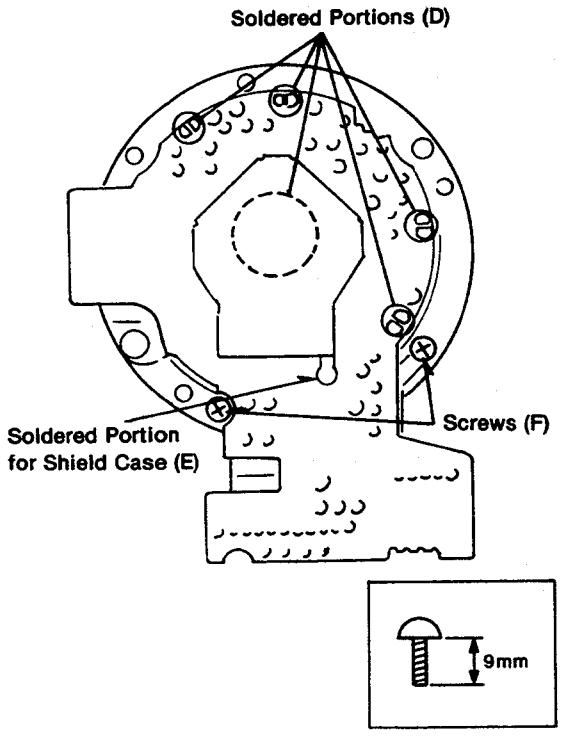



Fig. 1-12

**1.9 Replacement of the upper cylinder (DM4/0, DM4/2)**

The upper cylinder remover is useful to remove the upper cylinder easily, especially when it is too hard to remove by it hand.

- Remove 2 screws (A), then unsolder the soldered portions indicated by arrows as shown in Fig. 1-13.
- Set the screws of upper cylinder remover into holes (B) then tighten the screws of upper cylinder remover fully.
- Turn the handle of upper cylinder remover clockwise holding the upper cylinder firmly until it removes. (Upper cylinder is lifted up gradually during turning the handle).

*Note:*
- Work gently and carefully when removing the upper cylinder unit.
- Do not touch the video heads with bare hands during servicing. Use nylon gloves (5322 395 94022).
- **Do not remove the rotor (flywheel) of the scanning unit. The position of the flywheel is exactly adjusted in the factory.**

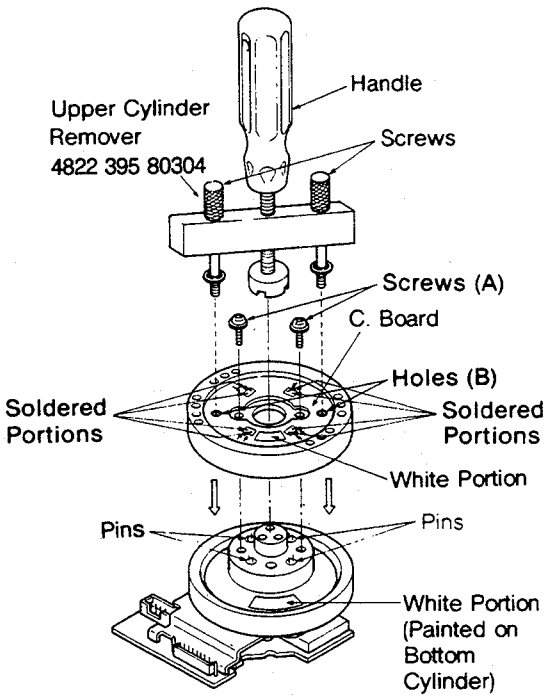



Fig. 1-13

Only for DM4/0, DM4/2 and DMS4/2

### 1.10 Replacement of the upper cylinder (DMS 4/2)

- Remove the two screws as shown in Fig. 1-14.
- Unsolder the soldered portion indicated by an arrow on the board.
- Remove the upper cylinder by lifting it upward.

Note:
Soldered portions can be removed easily by using solder sucking wire, etc.

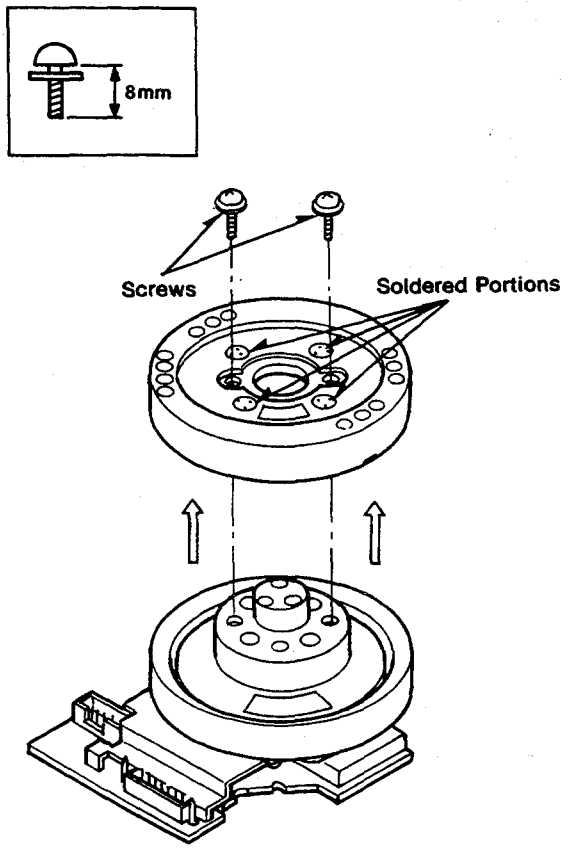



Fig. 1-14

- The upper cylinder unit can be reinstalled by reversing the removal procedure, however, when the upper cylinder is reinstalling, be extremely carefull so that the white portion of the cylinder board correctly matches the white portion of the bottom cylinder as shown in Fig. 1-15.

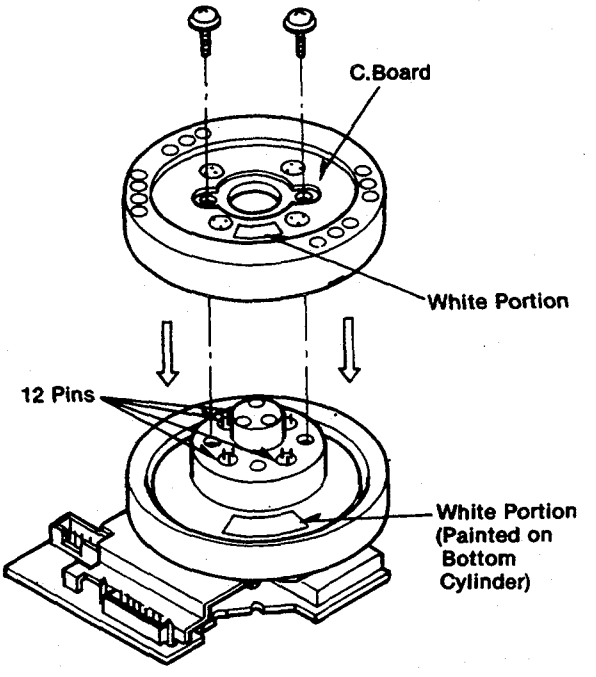



Fig. 1-15

Note:
- If the upper cylinder is reversely installed, no colour would appear when playing back a pre-record tape.
- **Do not loosen the 3 small screws on the top of the scanning unit, see Fig. 1-16.**
  **If these screws are loosened the scanning unit is broken and can not be restored.**

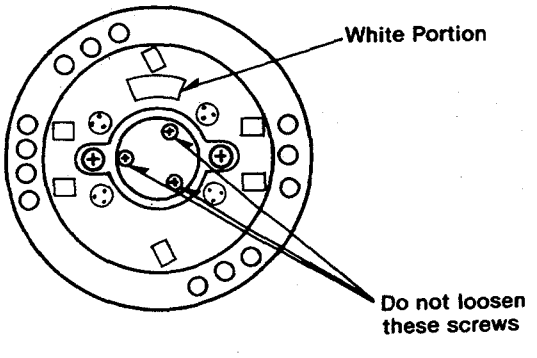



Fig. 1-16

6-1

### 1.11 Replacement of the upper cylinder (DMP 4/0, DMP 4/2)

Demounting

- Push the locking pin (one is supplied with each service replacement upper cylinder) throughthe bottem hole of the scanner motor, line it up with the hole in the rotor by rotating the upper cylinder. Apply enough pressure to snap it home, see Fig. 1-17
- Loosen clamping screw A of the upper cylinder with 2 or 3 turns to the left.
- Carefully pull the upper cylinder from the drum motor. Do not touch the upper cylinder with bare hands, use nylon gloves (5322 395 94022).

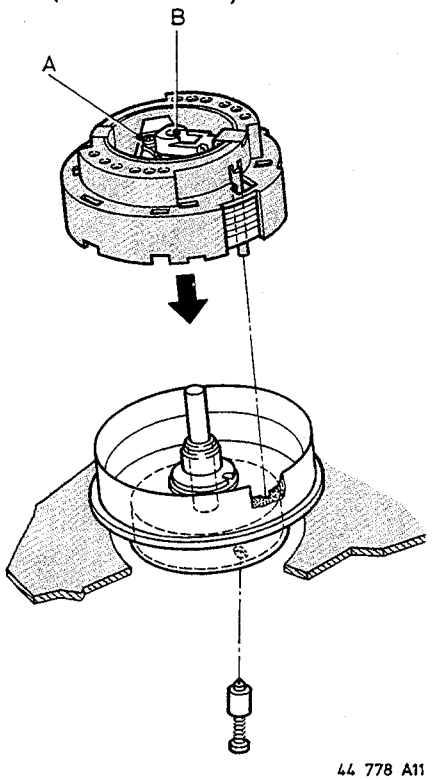



Fig.1-17

Mounting

- Before mounting the new upper cylinder, check that the axle of the drum motor is clean and undamaged (theaxle should be free from grease, do not touch it with bare hands).
- Position the upper cylinder on the scanner axle.

**Attention:**
The upper protective cover and the two 0.15 mm mylar foils remain on the upper cylinder during this operation, see Fig.xxxxx.

- Press down the upper cylinder in the centre B, see Fig.xxxx with a force of 1 N (centre of the protective cover).
- Turn fixing screw A clockwise with a torque of 20 Ncm.
- Pull protective cover from the upper cylinder.
- Pull out the two mylar foils at the side.
- Remove the rotor fixing pin.

**Note:**
After replacement of the upper cylinder the following checks have to be performed:

- Video switching point.
- Tape path inspection.
- Write current adjustment.

See for these adjustments the Service Manual of the relevant set.

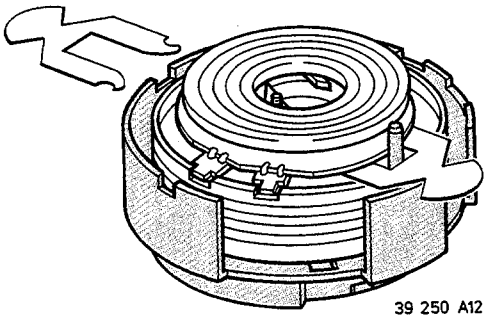



Fig. 1-18

### 1.12 Procedure for cleaning of upper cylinder unit

- Position the video head to permit access for cleaning and hold the upper cylinder to keep it from turning while cleaning, see Fig. 1-19.
- Gently rub the video head in direction of tape travel with a head cleaning stick.
- Repeat for the other video head.

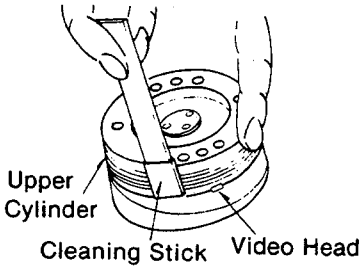



Fig. 1-19

## 1.13 How to use the disassembly chart

| STEP No. | START No. | PART | POS. | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|---|
| | | | | | Fig. No. | REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER | ADJUSTMENT CONDITION |
| 1 | 1 | D.D cylinder unit | 6(1) | T | DM2 | 3(S-1) | See, chapter 1.6 |
| 2 | 2 | A/C head unit | 34(1) | T | DM1 DM3 | (n-1),(W-1),*(P-1) *Wires at FE | (+) See, chapter 2.8B |
| | | | | | | | |
| | | | | | | | |
| 4 | 4 | Pinch cam cap | 44(1) | T | DM1 DM4 | *(L-1) | |
| 5 | 4 | Pressure roller unit | 45(1) | T | DM1 DM4 | | (+) <Note 1> |

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Order of steps in procedure
When reassembling, perform the step(s) in the reverse order.
These number are also used as the indentification (location) no. of parts in Figures DM (Deck Mechanism).

② Starting no. followed by corresponding part which can be removed at this stage.
See example below.
Example: A/C Head Unit can be removed without removing and other parts. But pressure roller pinch unit can be removed only after removing pinch cam cap (no. 4.).

③ Part to be removed or installed.

④ Pos. no. of the part in the exploded view. The number between brackets indicates the number of the exploded view.
(1) = Top view tapedeck
(2) = bottom view tapedeck
(3) = cassette compartment.

⑤ Location of part.
T = Top B = Bottom

⑥ Fig. no. showing procedure.

⑦ Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring W = Washer
C = Cut Washer R = Retaining Ring
N = Nut S = Screw
* = Unhook, unlock or release
3 (S-1) = 3 Screws (S-1)

⑧ Adjustment information for installation.
# = condition for adjustment
(+): Refer to Exploded Views for Lubrication information.

### 1.14 Connection of the flexible cable to trap connector P1504 and P1508

(Removal or installation of flexible cable)

1. Removal:
   On the trap connector, pull out both ends of the locking tab surrounding the cable end to release the trap connector.
   Then pull flexible cable out to remove as shown in Fig. 1-18.

2. Installation:
   - ★ Insert the end of the flexible cable into the trap connector so it lays smoothly across the slot.
   - ★ Press the middle of the cable firmly against the trap connector slot, and hold it there securely.
   - ★ Without pinching the cable press the locking tabs in against the trap connector until both ends snap into their locked positions.
   - ★ Pull lightly on the cable to check for positive connection.

Note:
Take care when removing or installing the flexible cable to prevent cable damage.

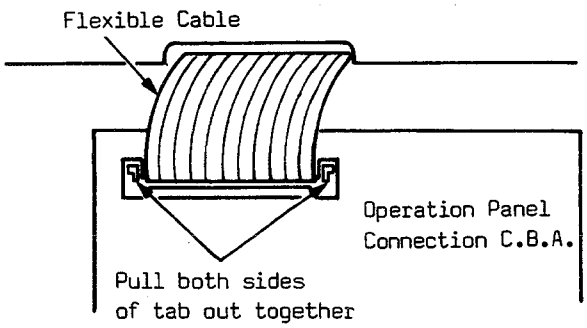
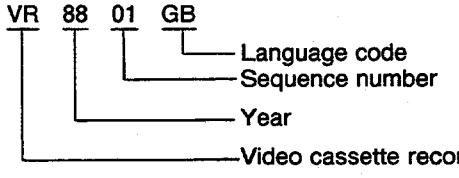



Fig. 1-18

### 1.15 Descripion of the system used for publishing modificationdata and supplements to the Service Manual

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.
Each Service Information has a number, for example:




A service Information bulletin consists of a yellow front sheet, As the case may be followed by suplementary and/or replacement sheets.
Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are indentified by an additional letter after the page number, for example 1a. Page 1a then takes the place of page 1.

Supplement sheets are inserted between the existing sheets in the Service manual. These sheets can be identified by an additional figure following the page number, for example 1-1.

Sheet 1-1 should be inserted after page 1.
Each Service Information is accompanied by an updated list of contents per page.
For each page added or each page replaced the list of contents indicates with which Service Information the relevant page has been published.

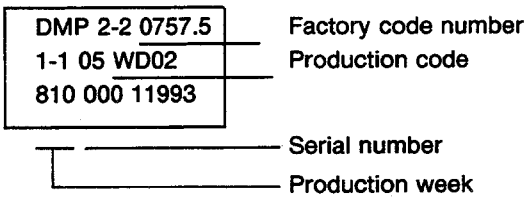
- **Description of the system by means of which modifications are indicated in the recorder**

The tape deck is provided with a sticker.
This sticker specifies a number of product data.
The meaning of this data will now be explained.

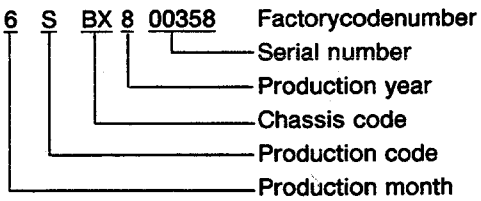
Tape deck
Location of the sticker: to the upside of the chassis between the reel tables.

Example

For tape deck DMP



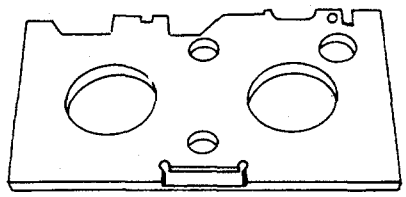

For tape deck DM or DMS



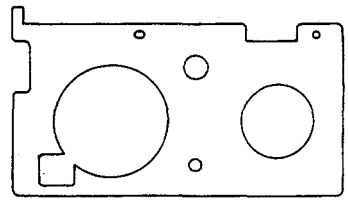

*Note:*
The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate of the set.

## 1.16 Auxiliary fixtures and tools for tape deck adjustments

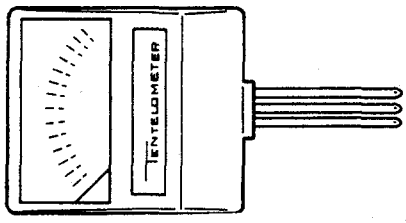
Alignment cassette
4822 397 30103



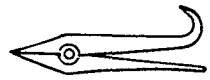
Post adjustment plate
4822 395 80184



Tension post adj. fixture
4822 395 90587



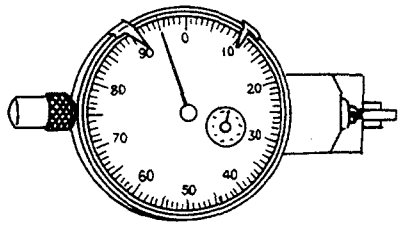

Back tension meter
4822 395 90584



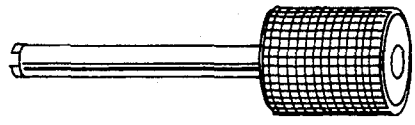
Retaining ring remover
4822 395 40055

H. position screwdriver
4822 395 50274

Check light
4822 395 90585

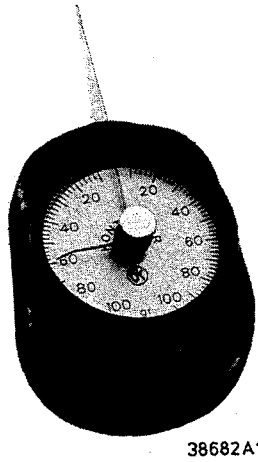



Micro meter
4822 395 90238

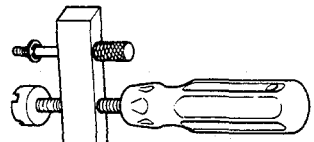


Post adjustment screwdriver
4822 395 50275

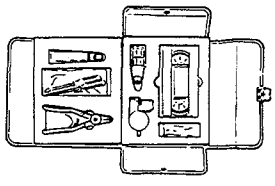
Height adjustment fixture
4822 395 90586



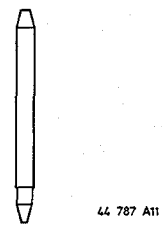

Spring pressure meter
5322 395 84011



Upper cylinder remover
4822 395 80304



Tool kit
4822 395 90253




Center pin
4822 395 60044

Fig. 1-19

## 2. MECHANICAL ADJUSTMENT PROCEDURES

### 2.1 Tension adjustment of timing belt

(Equipment Required)
Spring pressure meter 5322 395 84011
(Specification 40 ± 5g)

1. Loosen screw (A) slightly by using a screwdriver.
2. Set the spring pressure meter 5322 395 84011 to the direction indicated by the arrow (B) as shown in Fig. 2-1.
3. Tighten screw (A) when the reading of the spring pressure meter 5322 395 84011 becomes within 40 ± 5g.

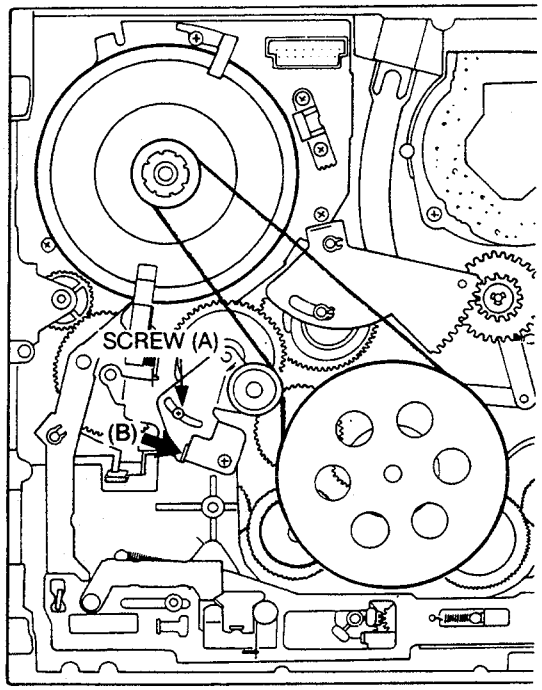



Fig. 2-1

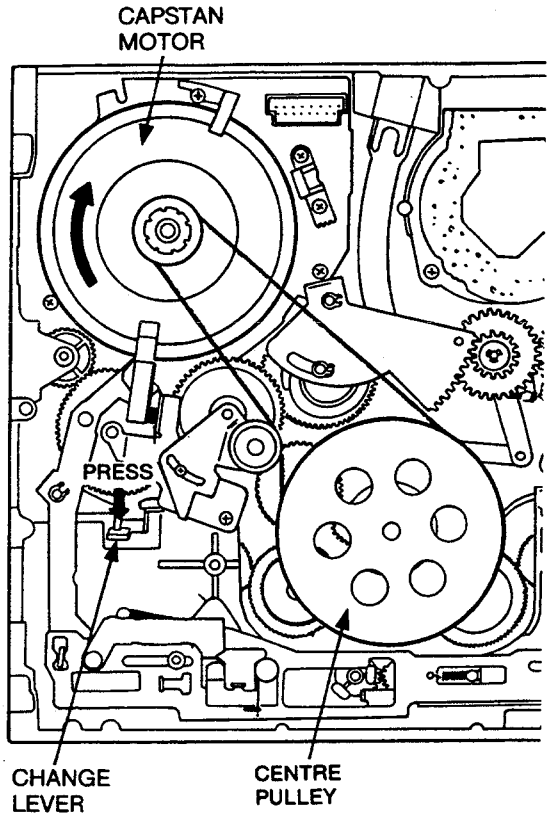



Fig. 2-2

### 2.2 Position adjustment of tension post pos. nr. 11(1)

(Equipment Required)
Tension post adjustment plate 4822 395 90587
Hex. Wrench: 2mm

- Disconnect the mains supply.
- Remove the cassette compartment and disconnect the flexible cable from P1508, see chapter 1.4.
- Turn the capstan motor clockwise while pushing change lever pos. no. 122(2) until loading is completed as shown in Fig. 2-2.
- Place the adjustment plate and insert the hex wrench into the hole of tension band fastener pos. no. 11(1), as shown in Fig. 2-3.
- Adjust the tension band fastener by using the hex wrench so that the outside edge of the tension post just touches the fixture of adjustment plate.
- After the adjustment, turn the capstan motor counter clockwise until the unloading is completed.

*Note:*
For assembling the cassette compartment, refer to chapter 4.10 "Reinstallation of cassette compartment".

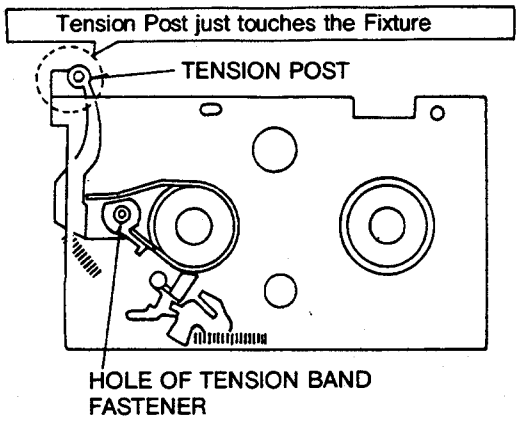



Fig. 2-3

## 2.3 Measurement and adjustment of the tape tension

(Equipment Required)
Back tension meter 4822 395 90584
VHS cassette (180 minutes tape)
(Specification 20 ... 25g)

1. Playback the cassette tape from the beginning and wait approx. 10 ... 20 seconds. until the tape movement has been stabilized.
2. Insert the back tension meter in tape path and measure the back tension to be within specification as shown in Fig. 2-4.

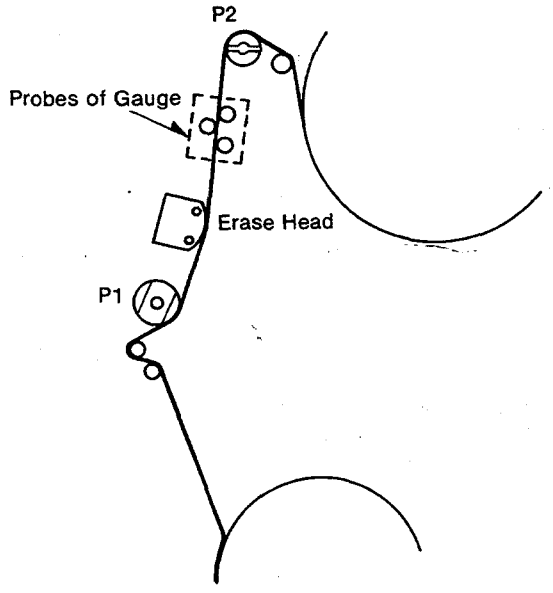



Fig. 2-4

*Note:*
- While measuring, make sure that the three probes of the meter are all in solid contact with the tape.
- As the tension meter is very sensitive, it is recommended to take 3 separate measurements.
- If the measurement is out of specification, re-position spring pos. no. 12(1) on the tension arm base teeth as shown in Fig. 2-5.
- Re-position tension spring toward front side to tighten tension, towad rear to loosen tension.
- Reïnstall a cassette and verify tension with the meter once again.

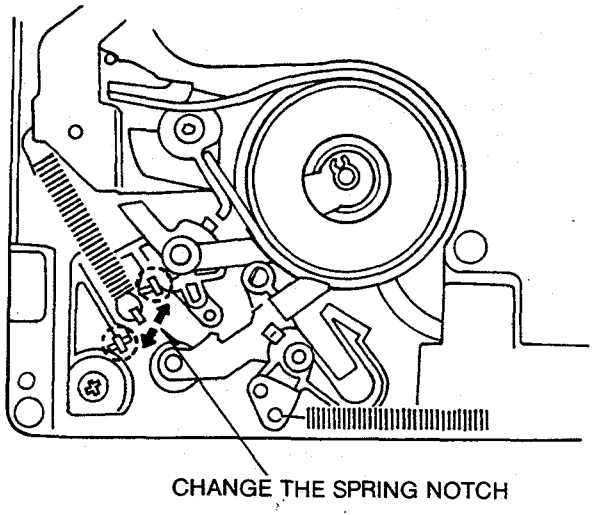



Fig. 2-5

## 2.4 Height adjustment of the reel tables

(Equipment Required)
Post adjustment plate 4822 395 80184
Micrometer 4822 395 90238
(Specification 0 ... 0.2mm)

- Remove the cassette compartment, see chapter 1.4.
- Place the post adjustment plate over the reel tables.
- Place the foot on the adjustment plate so that the foot of the meter touches the cut–out portion of the plate. Set the meter to zero "0" (reference setting) as shown in Fig. 2-6.

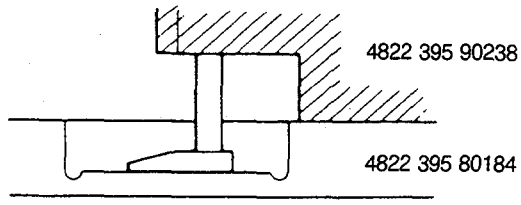



Fig. 2-6

- Measure the top surface of the reel table as shown in Fig. 2-7, and compare the difference against the result of the reference setting. Do the same for the other reel table.
- If the difference is more than 0.2mm (higher or lower), replace the poly washer located under the reel table with one of the appropriate thickness. Reel washers are available in thickness of 0.2 mm, 0.3mm and 0.5mm.

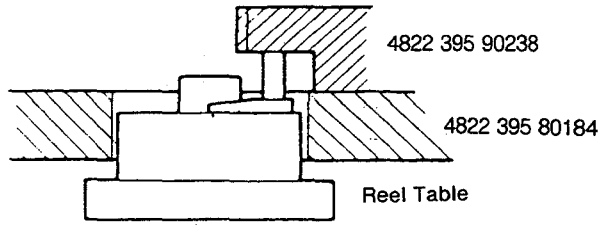



Fig. 2-7

| Washer Thickness | Part No. |
|---|---|
| 0.2mm | 4822 532 52057 |
| 0.3mm | 4822 532 52058 |
| 0.5mm | 4822 532 52055 |

**2.5 Adjustment of the capstan thrust gap**

(Equipment Required)

| | |
|---|---|
| Micro meter | 4822 395 90238 |
| Height adjustment fixture | 4822 395 90586 |

(Specification 0.5 ... 0.55mm)

- Place the tape deck upside down.
- Turn the thrust adjust screw pos. no. 41(1) slightly until the capstan roter unit just touches the coil of the capstan stator unit, see Fig. 2-8

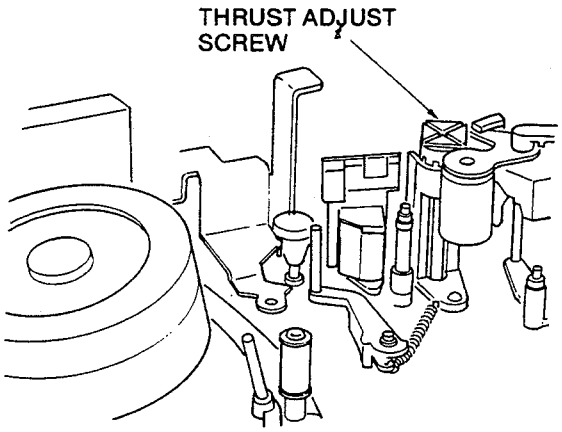



Fig. 2-8

- Set the height adjustment fixture on the capstan roter unit, see Fig. 2-9.
- Place the height fixture on the tape deck chassis and the foot on the longest side of the height fixture. Set the meter to "0" (reference position), see Fig. 2-9.
- Adjust thrust screw pos. no. 41(1) so that the thrust gap becomes 0.5 ... 0.55mm, see Fig. 2-10.

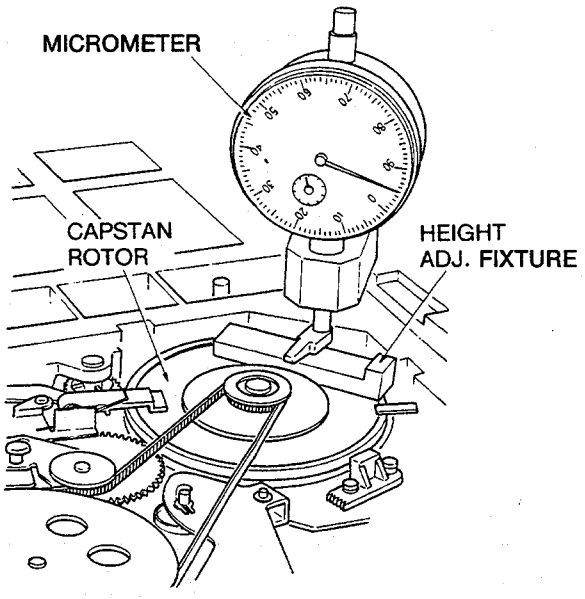



Fig. 2-9

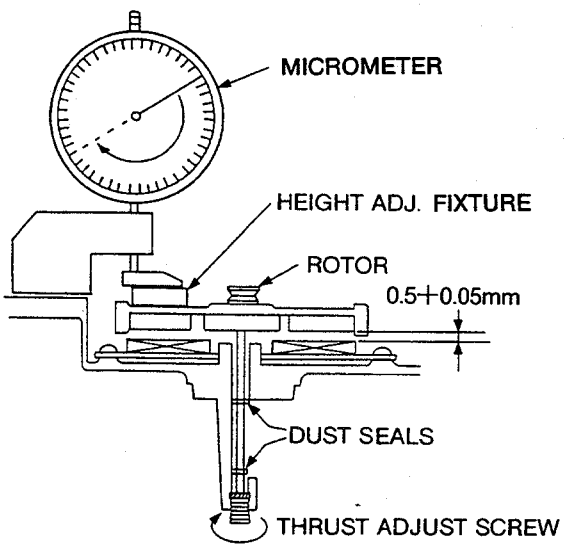



Fig. 2-10

**2.6 Height adjustment of tape guide posts P2 and P5**

(Equipment Required)

| | |
|---|---|
| Post adjustment plate | 4822 395 80184 |
| Micro meter | 4822 395 90238 |
| Post adjustment screwdriver | 4822 395 50275 |

- Remove the cassette compartment, see chapter 1.4.
- Place the post adjusmten plate over the reel tables. Confirm that the post adjustment plate is firmly seated as shown in Fig. 2-11.

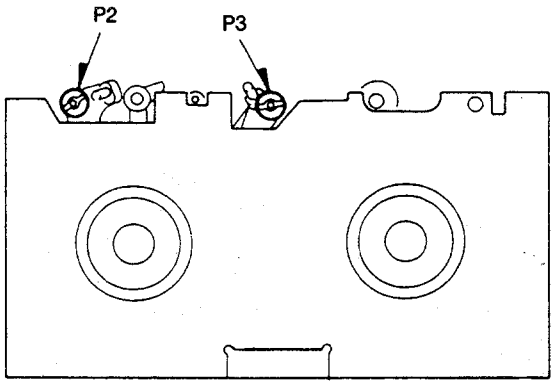



Fig. 2-11

- First lower all posts to match the height condition as shown in Fig. 2-12.
  The upper edge of the lower tape guide on each post should be below the bottom of the foot.
  Loosen lock screws located at lower position of post P2 & P3 using a lock screw wrench, then turn the posts with post adjustment screwdriver.

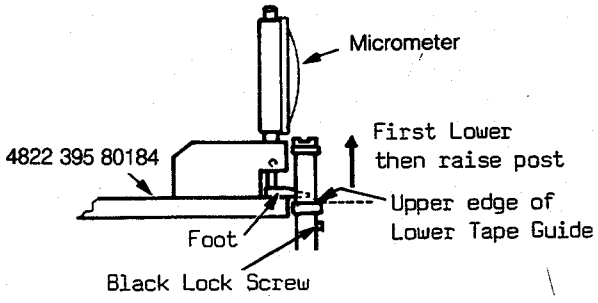



Fig. 2-12

- Place the fixture on the adjustment plate and fit the foot to the adjustment plate as shown in Fig. 2-12. (The foot of the fixture should be fully lowered till it touches the plate.)
- Set the fixture to '0' and slowly raise the post until it touches the foot. When the foot touches the post, it should fit as shown in Fig. 2-13.
  For adjustment of P2 and P3, use the post adjustment screwdriver.

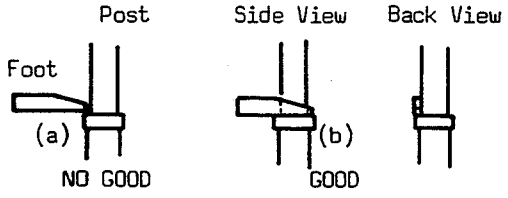



Fig. 2-13

*Note:*
After the adjustment, install the cassette compartment refering to chapter 4.10 "Reinstallation of cassette compartment".

**2.7 Height adjustment of pull-out post P5**

(Equipment Required)

| | |
|---|---|
| Post adjustment plate | 4822 395 80184 |
| Micrometer | 4822 395 90238 |
| Nut driver 5.5 mm | |
| specification (−0.06 + ± 0.01mm) | |

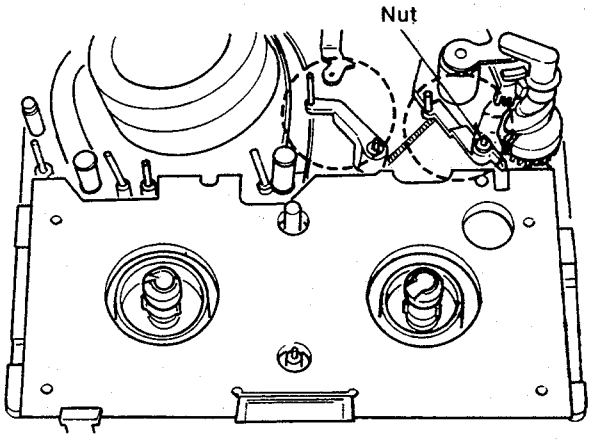



Fig. 2-14

*Note:*
Unless replacement or adjustment of this post is required, adjustment nut pos. no. 52(1) should not be performed.

- Remove the cassette compartment, see chapter 1.4.
- Place the post adjustment plate over the reel tables.
- Turn the capstan motor counter clockwise (loading direction) until the mechanical position becomes as shown in Fig. 2-14.
- Place the micrometer on the post adjustment plate and set the meter to zero "0" as shown in Fig. 2-15.
- Slightly raise the P5 post above the plate by turning the 5.5 mm Nut counter clockwise.
  Place the foot on the post as shown in Fig. 2-15.
- Now slowly turn the 5.5 mm Nut clockwise until the meter reads the specified height.
- After the adjustment, install the cassette compartment, (refer to chapter 4.10 "Reinstallation of cassette compartment").
- Play back a cassette tape and make sure that the edges of the tape are not curling at the bottom or top side of posts P1, P2, P3, P4 and pull out post P5 as shown in Fig. 2-16.
- If curling appears, readjust each post, except P1 and P4

Note:
The heights of posts P1 and P4 are exactly adjusted in the factory.
Do not disassemble there posts otherwise the moninal tape path will be completely unserviceable.

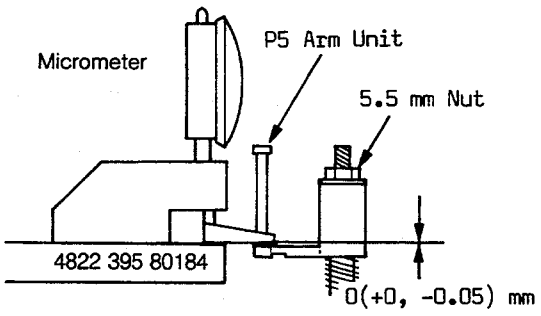



Fig. 2-15

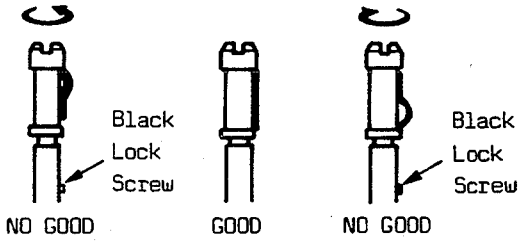



Fig. 2-16

**2.8 Nominal tape path adjustment**

*Note:*
Perform following procedures for nominal tape path adjustment. Do it correctly and smoothly.

**A. Confirmation and adjustment of P2 and P3 posts.**
**B. Height adjustment of A/C head.**
**C. Tilt adjustment of A/C head.**
**D. Azimuth adjustment of A/C head.**
**E. Horizontal position of A/C head.**
**F. Confirmation of the tape path adjustment.**

If the tape Path adjustment is not perfect, repeat the above procedures from A to F. Fig. 2-17 shows the position of the tape guide posts.

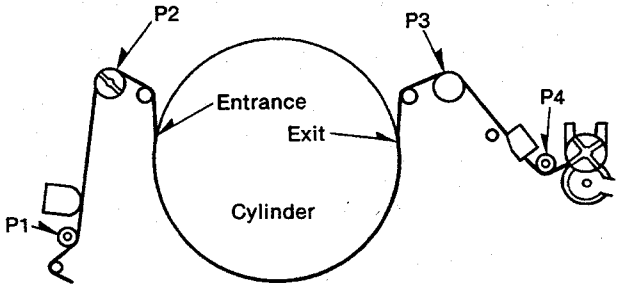



Fig. 2-17

**A. confirmation and adjustment of P2 and P3 posts**

(Equipment Required)
Alignment tape 4822 397 30103
Post adjustment screwdriver 4822 395 50275

- Switch the set off and on again
  (By switching the set off and on the tracking control will be adjusted to a nominal value).
- Connect the oscilloscope to the output of the head amp as shown in Fig. 2-18.
  For the connecting points make reference to the relevant service Manual.

  *Note:*
  To get a stable waveform of the head amp output on the oscilloscope, use the head switching pulse as a triggering signal as shown in fig. 2-18.

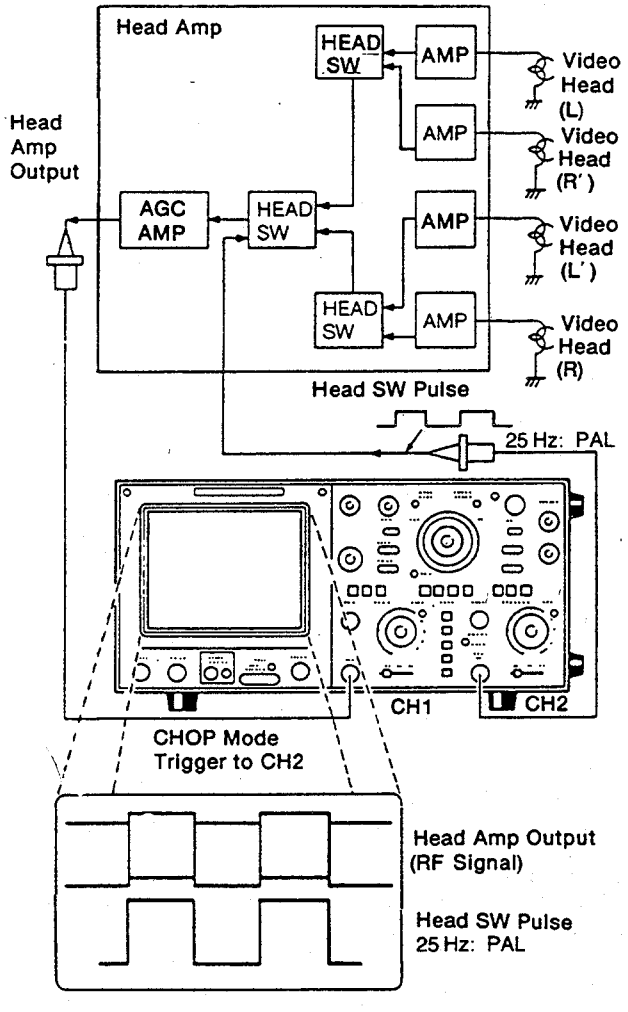



Fig. 2-18 44 463 B11

- Play back the alignment tape.
- If a FM envelope appears like example "A" or "B" in Fig. 2-19 then adjustment of the tape guide post is necessary (P2: entrance).
- Adjust tape guide post P2 with the post adjustment screwdriver so that the FM envelope waveform at the entrance portion becomes flat as shown in Fig. 2-19.
- If the FM envelope appears like example "D" or "E" in Fig. 2-20, then adjustment of the tape guide post (P3: Exit) is necessary.
- Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Fig. 2-20.

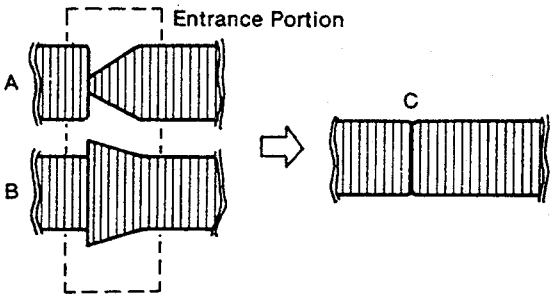



Fig. 2-19

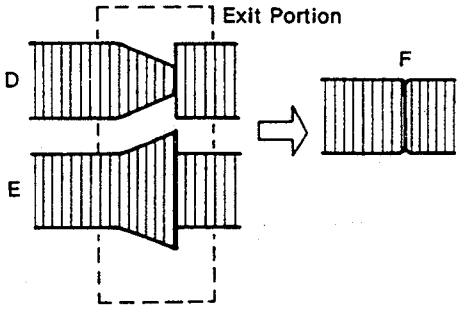



Fig. 2-20

**B. Height adjustment of A/C head**

*Note:*
This procedure should be performed only when the A/C head is replaced.

(Equipment Required)
Check Light 4822 395 90585
Nut driver 7 mm

- With the tape running, look at the lower edge of the control head by using the check light and check if the lower edge of the tape runs along the lower edge of the control head, see Fig. 2-21.
  If it doesn't, slightly turn nut C behind the A/C head (Fig. 2-21) to either lower or raise the A/C head so that the tape runs along the lower edge of the control head.
  Turn the nut C clockwise to lower the head, and counter–clockwise to raise it.

*Note:*
The mark on the A/C head indicates the lower edge. Scew marked (*) pressures the A/C head to the bottom plate. Do not tighten the screw to fast otherwise the A/C head alignments can not be reached.

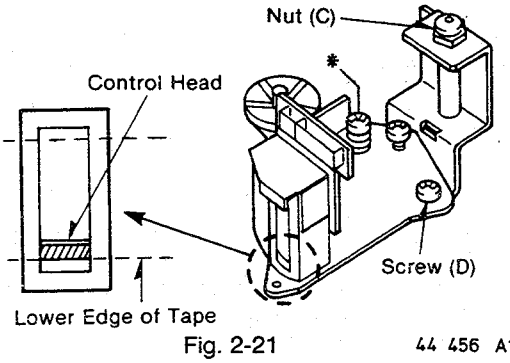
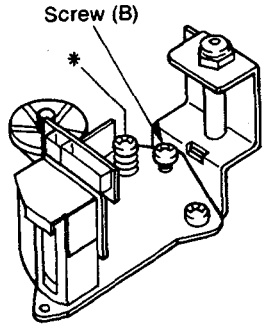



Fig. 2-21 44 456 A11

### C. Tilt adjustment of A/C head

*Note:*
This procedure should be performed after replacing the A/C head or pressure roller pos. no. 45(1).

- Playback the beginning portion of a blank cassette tape and confirm that the tape runs between the lower and upper limiter of P4 post. If there is waving or curling in the lower edge or top edge of the tape, correct the tilt of the a/C head by turning screw B, see Fig. 2-22 located behind the A/C head.
  Fig. 2-23 shows the direction how the turn to correct curling.




44 466 A11

Fig. 2-22

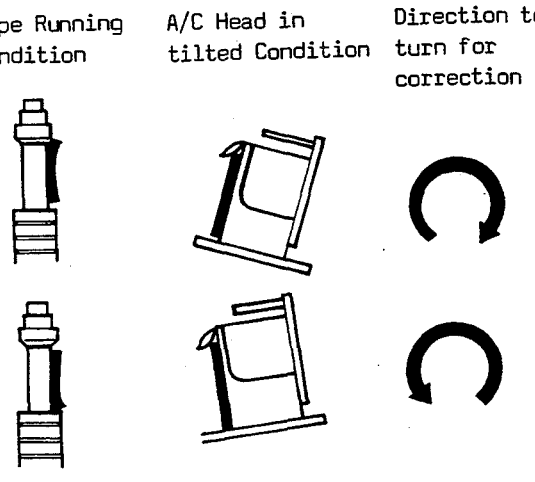



Fig. -23

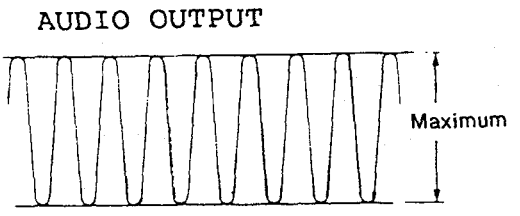
*Note:*
After tilt adjustment of the A/C head, height adjustment of A/C head is required.

### D. Azimuth adjustment of A/C head

*Note:*
This procedure should be performed only when the A/C head is replaced and posts height are readjusted.

(Equipment Required)
Alignment tape 4822 397 30103

- Connect the oscilloscope to the audio output on the rear panel.
- Play back the 2nd portion (normal audio 6KHz) of the alignment tape.
- Adjust screw D so that the output level becomes maximum, see Fig. 2-24




44 458 A11

Fig. 2-24

### E. Horizontal position adjustment of A/C head

*Note:*
THis procedure should be performed only when the A/C head is replaced, and after performing the tape path adjustment.

(Equipment Required)
H-Position adjustment screwdriver 4822 395 50274
Alignment tape 4822 397 30103

- Switch the set off and on again
  (By switching the set off and on the tracking control will be adjusted to a nominal value).
- Connect the oscilloscope to the output of the head amp as shown in Fig. 2-18.
  For the connecting points make reference to the relevant service Manual.
- Play back the alignment tape
- Adjust horizontal position screw pos. no. 36(1) of the A/C head, see Fig. 2-25 so that the RF signal becomes maximum, see Fig. 2-26.

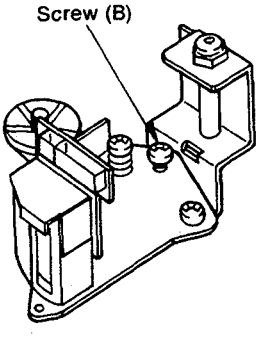



Fig. 2-25

### F. Confirmation of the tape path adjustment.

- Switch the set off and on again to perform a nominal tracking position control.
- Connect the oscilloscope to the output of the head amplifier as shown in Fig. 2-18.
- The symmetrie of the FM envelope, can be checked after pressing the "TRACKING" button.
  The output level must be almost equal as shown in Fig. 2-26.
- If the FM envelope does not meet the specification ($V1/V \geqslant 0.7$; $V2/V \geqslant 0.8$) see Fig. 2-27, repeat above mentioned adjustments A to F.

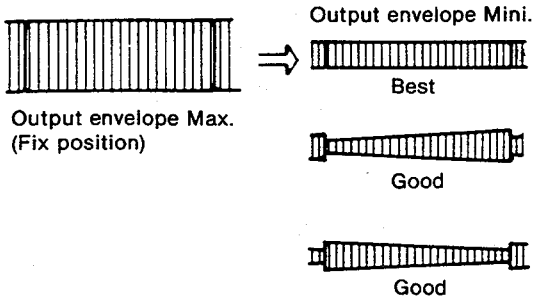


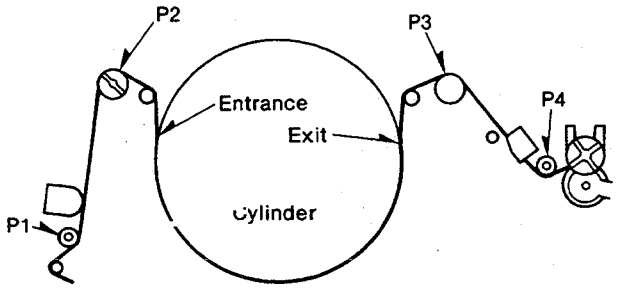

Fig. 2-26

## 2.9 Adjusment of FG head

(Equipment required)
Oscilloscoop
Feeler gauge 0.1-0.13 mm

- Place the unit upside down.
- Slightly loosen screws A, see Fig. 2-28.
- Adjust the FG head until the distance between capstan rotor and Fb head is 0.1-0.13 mm.
- Tighten screws A.
- Confirm that the FG head output level is more than 10 mVpp.
  If the level is not more than 10 mVpp, re-adjust the FG head gap so that the FG head output level is more than 10 mVpp

*Note:*
Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).



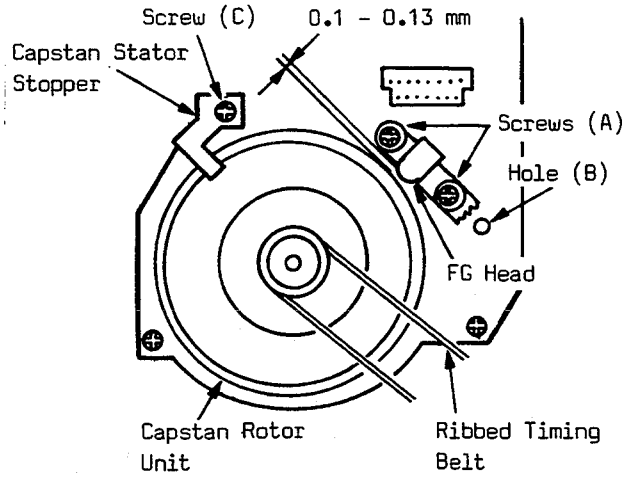
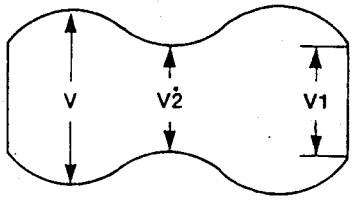




Fig. 2-28




V1/V≧0.7
V2/V≧0.8

Fig. 2-27

44 465 B11

## 3. DISASSEMBLY CHART AND PROCEDURES

### 3.1 Chassis

This procedure starts with the condition that the cabinet parts, front C.B.A., Cassette and head Amp assy have been removed.
Also, all the following procedures for adjustment and part replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reserve order.

| STEP No. | START No. | PART | POS. | | REMOVAL Fig. No. | REMOVAL REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER | INSTALLATION ADJUSTMENT CONDITION |
|---|---|---|---|---|---|---|---|
| 1 | 1 | D.D scanning unit | 6(1) | T | DM2 | 3(S-1) | See, chapter 1.6 |
| 2 | 2 | A/C head unit | 34(1) | T | DM1 DM3 | (N-1), *(P-1) *Wires at FE | (+) See, chapter 2.8B |
| 3 | 3 | Sub loading arm unit | 39(1) | T | DM1 | (R-1),*(P-2) | (+) See, Fig. DM17 |
| 4 | 4 | Pinch cam cap | 44(1) | T | DM1 DM4 | *(L-1) | |
| 5 | 4 | Pressure roller unit | 45(1) | T | DM1 DM4 | | (+) <Note 1> |
| 6 | 5 | Pinch cam | 51(1) | T | DM1 DM4 | | See, chapter 4.9 |
| 7 | 6 | Pinch speed down gear | 64(1) | T | DM1 DM4 | (C-8) | (+) See, chapter 4.2 |
| 8 | 8 | Connection gear | 65(1) | T | DM1 DM4 | (C-1) <note 2> | (+) See, chapter 4.7 |
| 9 | 9 | Main brake units | 24(1) 27(1) | T | DM1 DM5 | 2(C-2),*2(P-3),*(P-4) <note 2> | (+) See, setting condition in Fig. DM5 |
| 10 | 9 | Tension band unit | 13(1) | T | DM1 DM6 | *(P-5),*(L-2) | (+) See, chapter 2.2 |
| 11 | 11 | Takeup reel table | 71(1) | T | DM1 | (R-2) | <note 5> |
| 12 | 10 | Supply reel table | 14(1) | T | DM1 | (R-3) | (+) See, chapter 2.4 |
| 13 | 5 | P5 sector gear | 50(1) | T | DM1 DM7 | *(L-3) | See, chapter 4.8 |
| 14 | 13 | P5 unit | 53(1) | T | DM1 DM7 | (N-2),(W-2),*(P-6) | (+) Stop (half loading)<note 3> and see chapter 2.7 |
| 15 | 15 | SS brake unit | 105(2) | B | DM2 | (C-4) | <note 2> |
| 16 | 16 | Tension roller unit | 108(2) | B | DM2 | (S-2) | |
| 17 | 16 | Brake base | 107(2) | B | DM2 | (S-3) | |
| 18 | 18 | Cam follower arm unit | 109(2) | B | DM2 | (R-5) | <note 4> |
| 19 | 18 | Main/sub lever | 103(2) 104(2) | B | DM2 DM9 | 2(C-3),2(W-4) | See, setting condition in Fig. DM9 |
| 20 | 19 | Center pulley unit | 137(2) | B | DM2 DM10 | (C-4),(W-5) Ribbed timing belt <note 2> | (+) See, Fig. DM10 |
| 21 | 20 | Clutch disk ass'y | 116(2) | B | DM2 DM11 | (C-5) <note 2> | See, chapter 4.4 |
| 22 | 20 | Stopper base | 131(2) | B | DM12 | (S-4) | |
| 23 | 17 | Centre gear | 113(2) | B | DM2 DM11 | (C-6) | (+) See, chapters 4.4 |
| 24 | 17,18 | Main cam gear | 111(2) | B | DM2 DM11 | (R-6) | (+) See, chapters 4.2 and 4.3 |
| 25 | 24 | Detent arm | 110(2) | B | DM11 | | (+) |
| 26 | 25 | Sub cam gear | 112(2) | B | DM4 DM11 | | (+) See, chapter 4.1 |

| STEP No. | START No. | PART | POS. | | REMOVAL Fig. No. | REMOVAL REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER | INSTALLATION ADJUSTMENT CONDITION |
|---|---|---|---|---|---|---|---|
| 27 | 26 | Release lever unit | 125(2) | B | DM13 | (S-5) | See, setting condition in Fig. DM13 |
| 28 | 27 | Intermediate gear | 146(2) | B | DM14 | (C-7),(W-6) | |
| 29 | 28,30 | Drive disk | 119(2) | B | DM14 | | |
| 30 | 30 | Sector gear unit | 141(2) | B | DM2 DM11 | 2 (R-6) | (+) See, chapter 4.6 <note 7> |
| 31 | 30,23 | Loading cam gear | 142(2) | B | DM11 | | (+) See chapter 4.3 <note 7> |
| 32 | 31 | Play arm unit | 147(2) | B | DM14 | | |
| 33 | 32 | Play control arm | 144(2) | B | DM14 | *(L-4) | |
| 34 | 31 | Retainer gear | 114(2) | B | DM11 | | (+) See, chapter 4.3 |
| 35 | 33 | Ring gear | 120(2) | B | DM11 | | (+) See, chapter 4.1 |
| 36 | 30,20 | Loading arm-S unit | 145(2) | B | DM2 Dm11 | *(L-5) | (+) See, chapter 4.6 |
| 37 | 30,20 | Loading arm-T unit | 140(2) | B | DM2 DM11 | *(L-6) | |
| 38 | 12 | Tension arm base unit | 18(1) | T | DM1 DM2 | (S-6), *(L-7) | (+) See, chapter 2.2 |
| 39 | 7 | Housing unit | 72(1) | T | DM1 | 3(S-7) | (+) |
| 40 | 39,3 | Flex C.B.A. | | T | DM1 DM15 | 3(S-8) *Connection | |
| 41 | 6 | Mode switch | 55(1) | T | DM1 | (S-9) *Connections | See, chapter 4, 8 |
| 42 | 40 | Shield plate | 56(1) | T | DM15 | | |
| 43 | 43 | Solenoid unit | 66(1) | T | DM16 | (S-10), *Connections | |
| 44 | 43 | Solenoid lever unit | 68(1) | T | DM16 | *(L-8) | (+) |
| 45 | 45 | Post stopper (L,R) | 60(1) | T | DM1 | 4(S-11) | <note 6> |
| 46 | 45,36 | Inclined base unit (S) | 58(1) | T | DM1 | | (+) See chapter 2.6 |
| 47 | 45,37 | Inclined base unit (T) | 62(1) | T | DM1 | | |

List of Abbreviations:

C.B.A. = Circuit Board Assembly
T = Top; B = Bottom
(R-1) = Retaining Ring(R-1); (P-1) = Spring (P-1); (S-1) = Screw (S-1);
(W-1) = Washer (W-1); 2(S-2) = 2 Screws (S-2); (C-1) = Cut Washer (C-1);
(N-1) = Nut (N-1); (L-1) = locking Tab (L-1)
(+): Refer to Exploded Views for Lubrication information.

# TOP VIEW

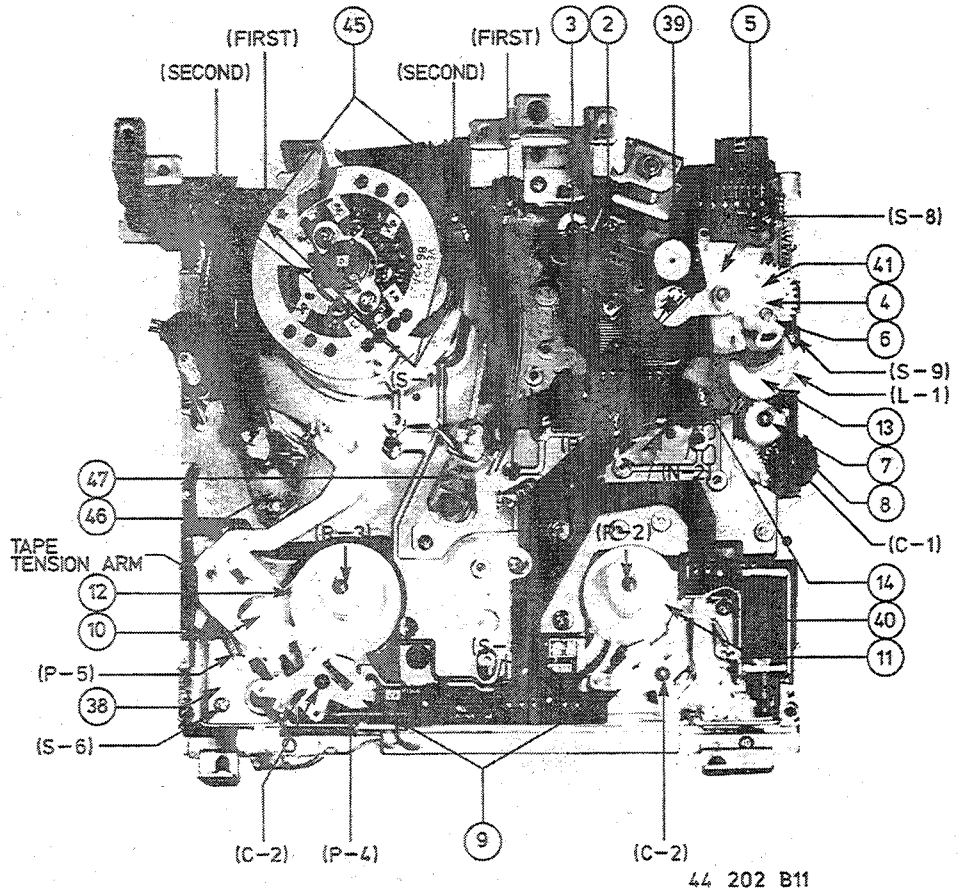



Fig. DM1

# BOTTOM VIEW

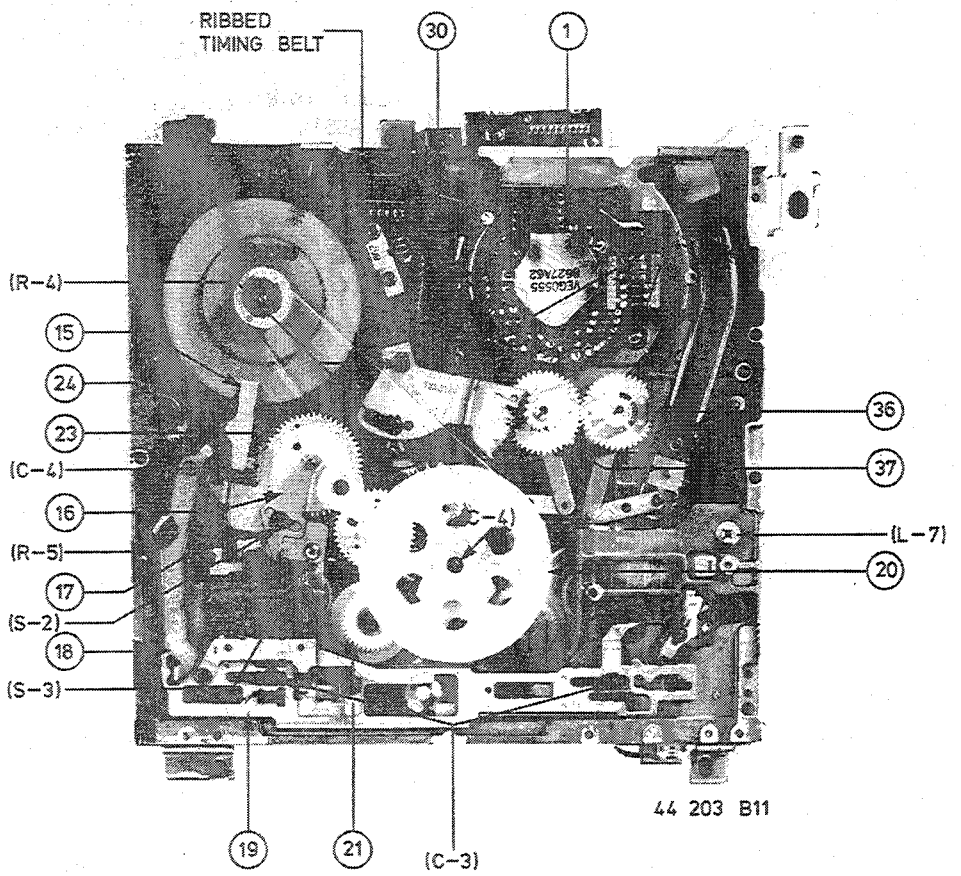



Fig. DM2

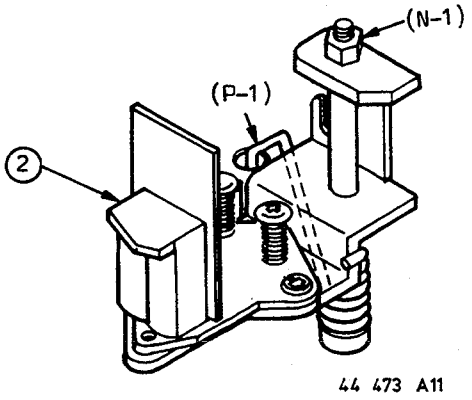



Fig. DM3

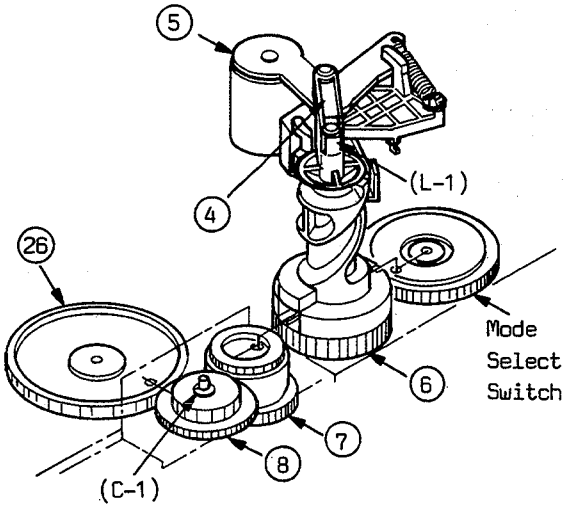
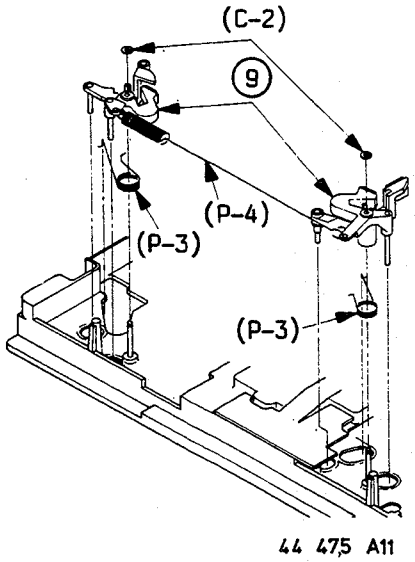



Fig. DM4



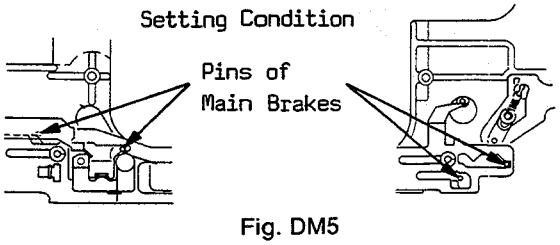




Fig. DM5

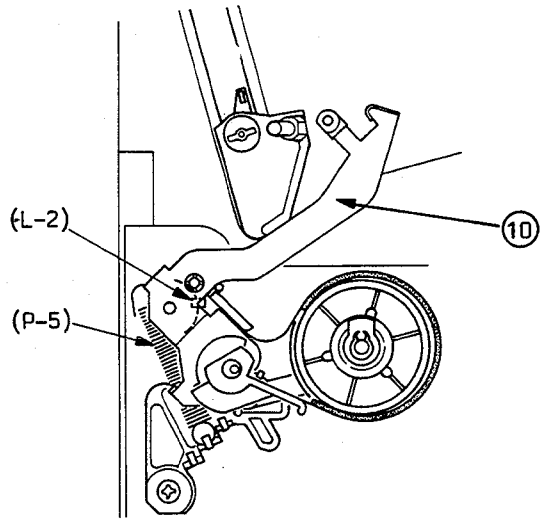



Fig. DM6

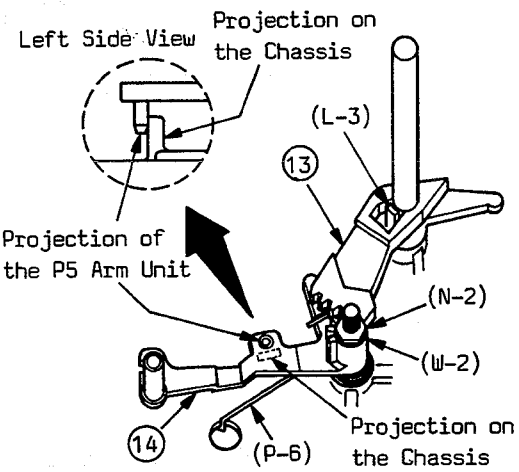



Fig. DM7

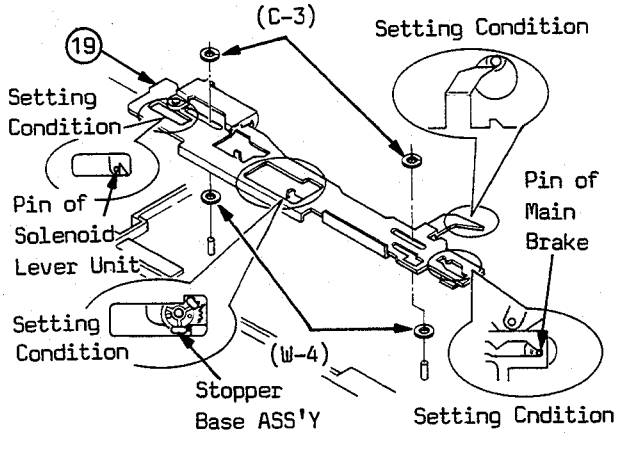



Fig. DM9

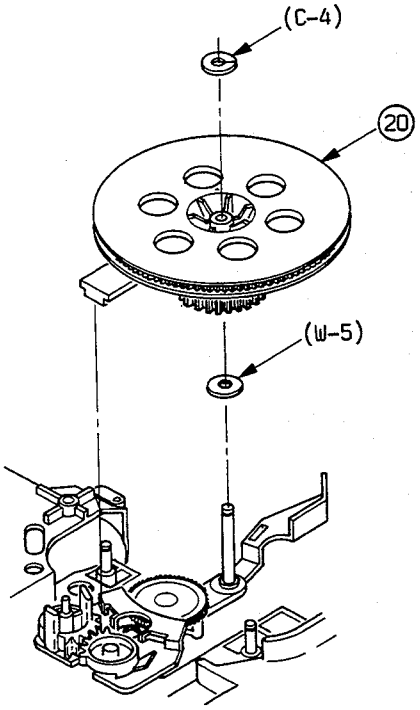



Fig. DM10

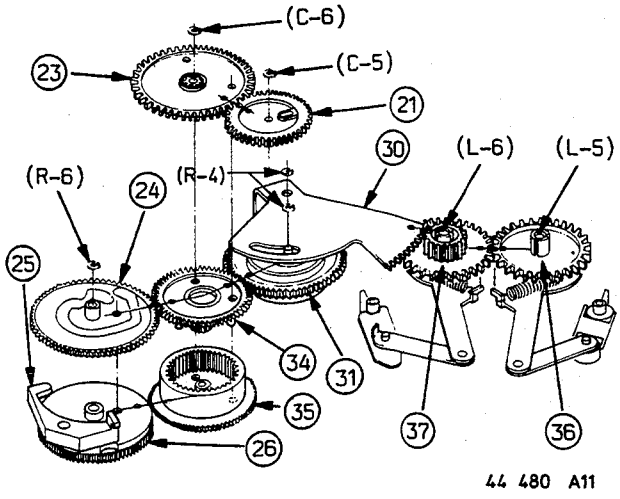



Fig. DM11

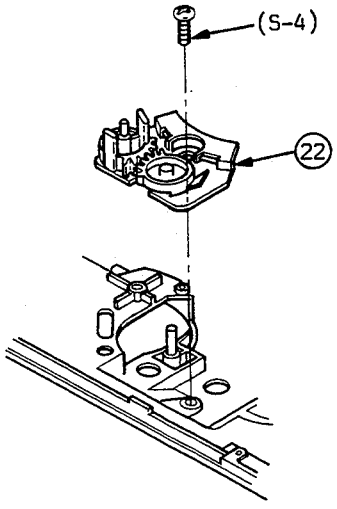



Fig. DM12

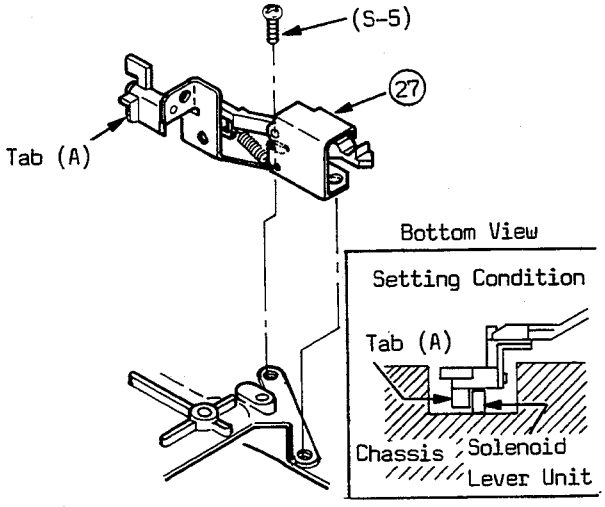



Fig. DM13

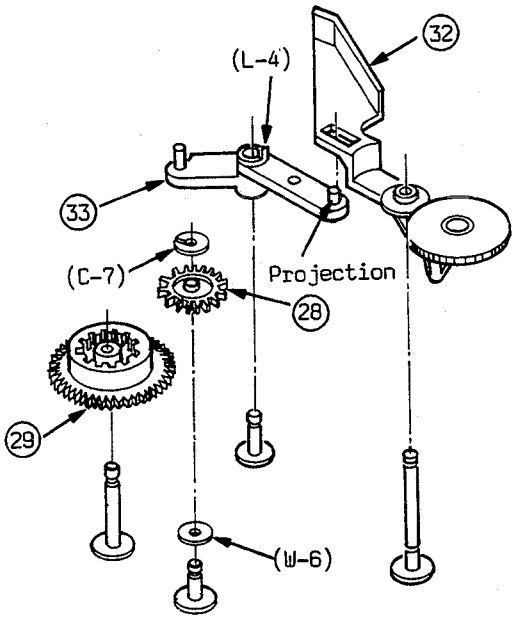



Fig. DM14

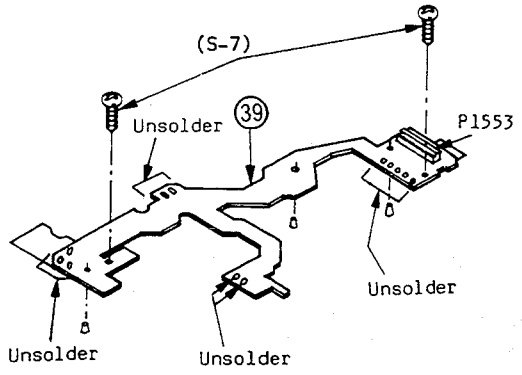



Fig. DM15

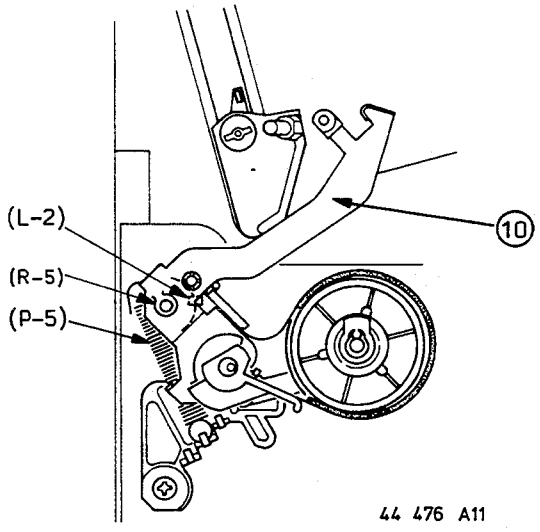



Fig. DM17

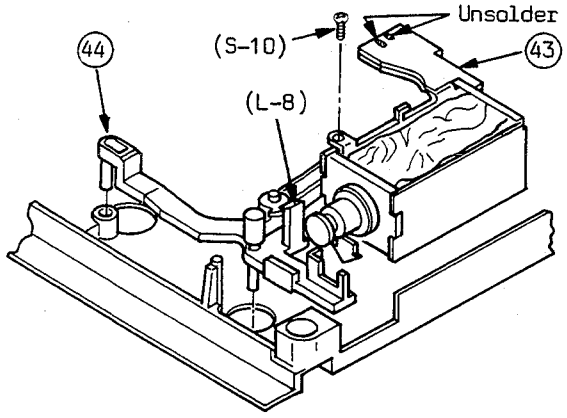



Fig. DM16

**Reference notes in the disassembly chart:**

1. Wiggle it sideways to proprly seat the pressure roller arm unit.
2. Cut washers are not reuseable.
   If removed, install a new one.
3. Install the P5 arm unit so that the projection of the P5 arm unit seats in front of the projection on the chassis as shown in Fig. DM7.
4. Install the cam follower arm unit so that the pin on the cam follower meets the inner slot of the main cam gear.
5. When reinstalling the supply and take-up reel tables, clean the rotating surface of them with a soft cloth.
6. When reinstalling the V stopper (L,R), fit the V stopper (L,R) to the chassis by turning it clockwise.
   And then, tighten the screws in order indicated in the diagram. (refer to Fig. DM1)
7. Ensure the tape tension arm is positioned as shown in Fig. DM1 for STOP mode.

## 3.1 CASSETTE COMPARTMENT

### A. Right Side

First, remove the cassette compartment from chassis.
This procedure starts with the condition that the cassete compartment top plate and cassette holder unit have been removed. When reassembling, perform the step(s) in the reverse order.

| STEP No. | START No. | PART | POS. | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|---|
| | | | | | Fig. No. | REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER | ADJUSTMENT CONDITION |
| 1 | 1 | Cassette Guide -R- | 234(3) | R | DA1 | *3(L-1) | |
| 2 | 2 | Sub wiper arm -R- | 232(3) | R | DA1 | *Sub wiper Spring -R- *(L-2) | |
| 3 | 3 | Slider switch unit | 221(3) | R | DA1 | *3(L-3) | Align the movable projection (A) and (B) |
| 4 | 4 | Down support lever | 222(3) | R | DA1 | *(L-4) | |
| 5 | 1,2,3 | Rack Ass'y | 224(3) | R | DA1 | | (+) Align the Triangle Marks |

List of Abbreviations:
R = Right; 3(L-1) = Locking Clip (L-1)
(+): Refer to Exploded View for Lubrication information.

### B. Left Side

| STEP No. | START No. | PART | POS. | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|---|
| | | | | | Fig. No. | REMOVE *UNHOOK/UNLOCK /RELEASE/UNPLUG/UNSOLDER | ADJUSTMENT CONDITION |
| 1 | 1 | Cassette Guide -L- | 234(3) | L | DA2 | *3(L-1) | |
| 2 | 2 | Wiper arm -L- | 231(3) | L | DA2 | | |
| 3 | 3 | Opener lever | 218(3) | L | DA2 | *(L-2) | |

List of Abbreviations:
L = Left; 3(L-1) = Locking Clip (L-1)

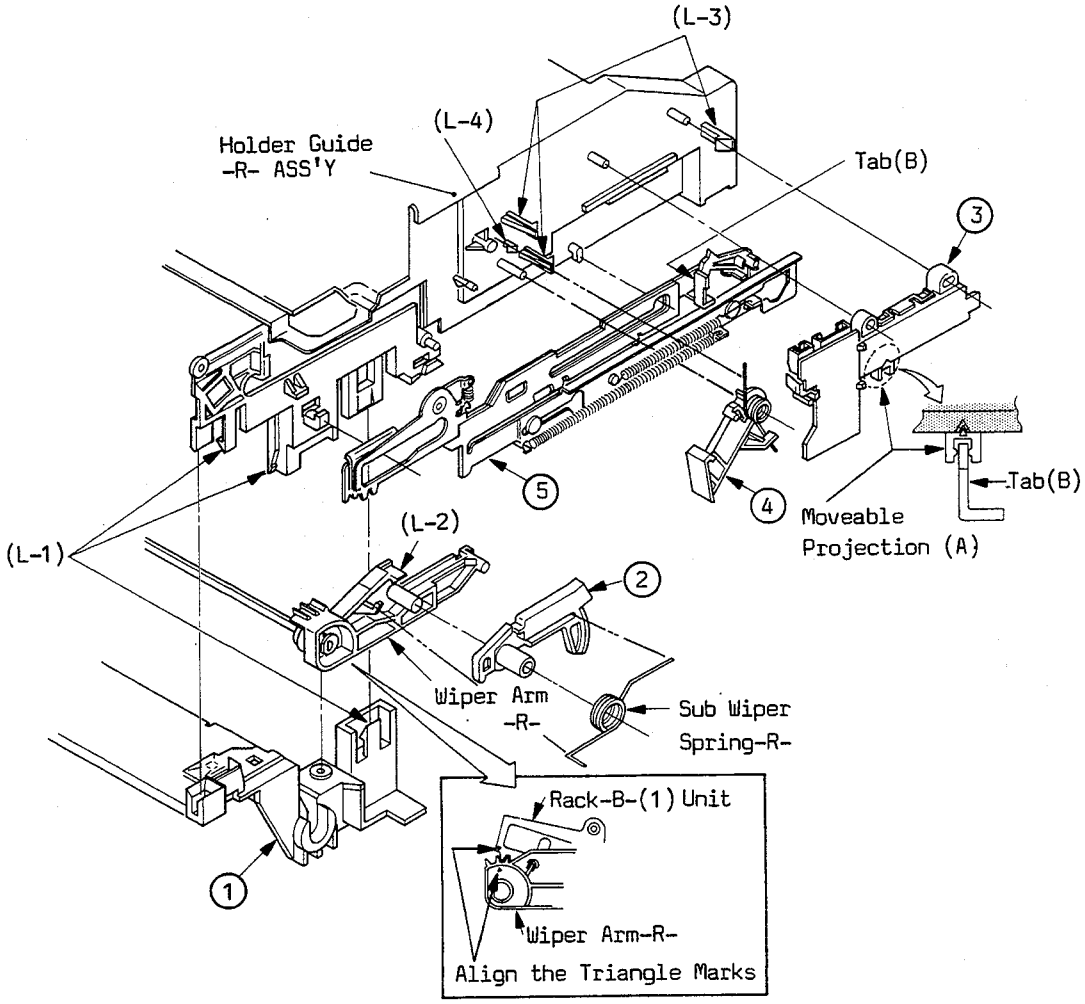



Fig. DA1

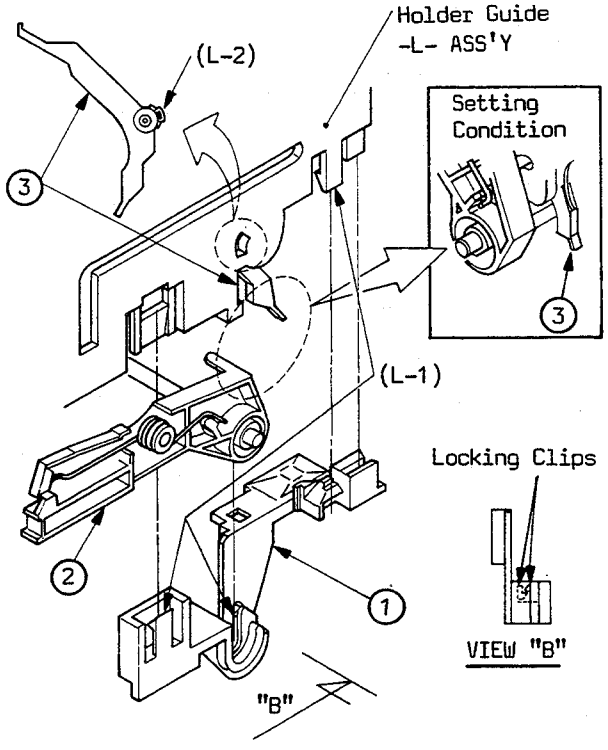



Fig. DA2

## 4 ASSEMBLY AND ADJUSTMENT PROCEDURES OF MECHANISM

The G-tape deck is mostly engaged to the system control circuit, through the mode select switch, pos. no. 55(1). Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.
If these parts are not aligned properly, the unit will be unloaded or stopped.
It may result in damage mechanical or electrical parts.
The detail of mechanical condition will be described later.

**Note:**
**The phase relevant gears have been provided with holes or a protection mark. For a proper alignment of the gears refer to Fig. 4-1 (bottom view) and Fig. 4-2 (top view).**
**This mechanical adjustment is performed in the STOP mode, while the numerically sequence shows the asembly procedure.**

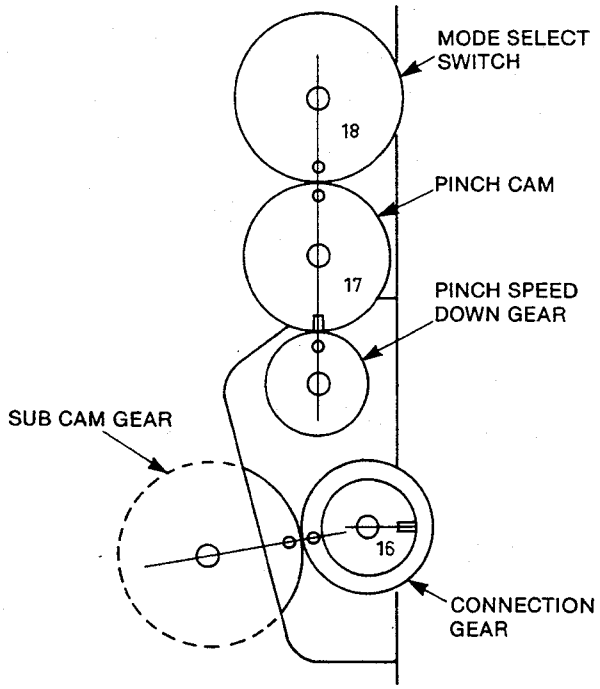



Fig. 4-1 44 460 B11

Bottom view of overall mechanical condition

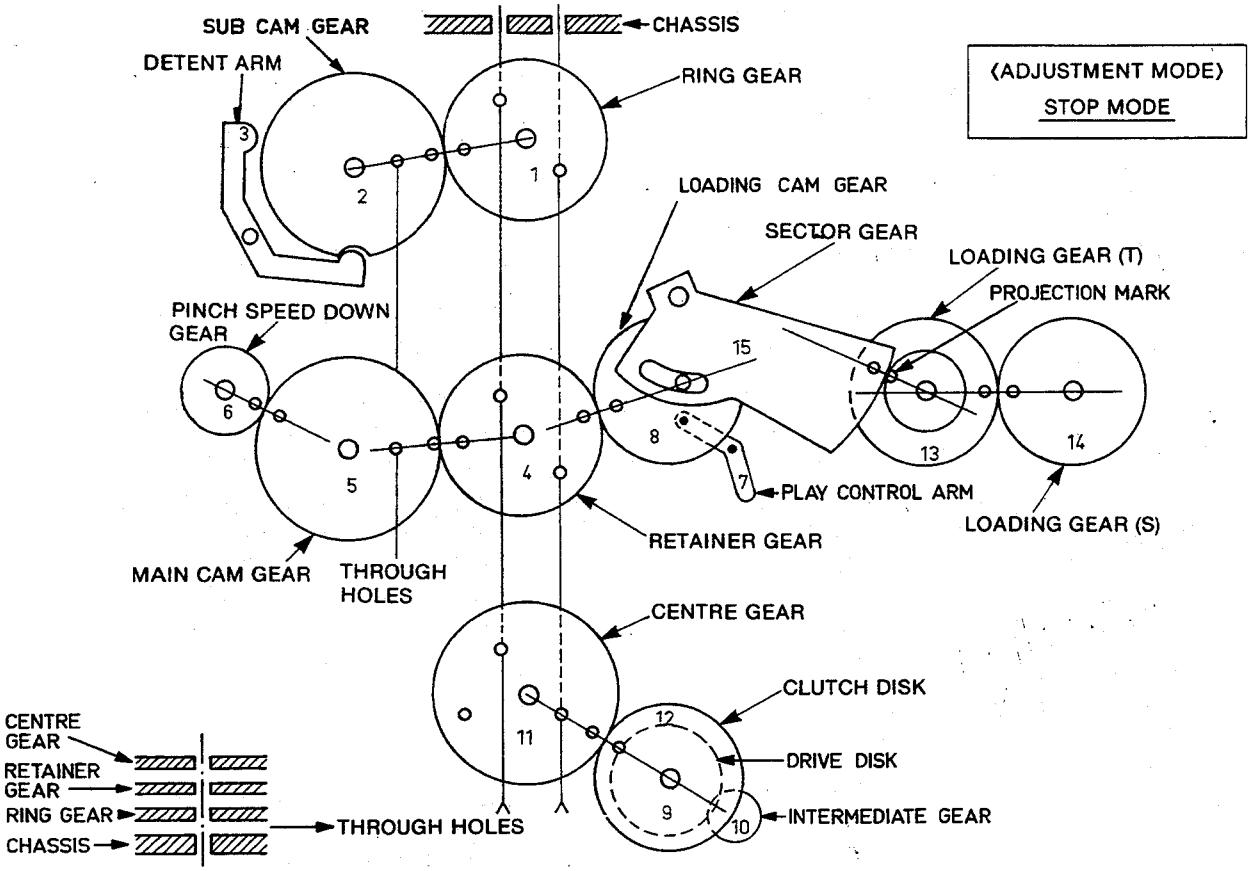



Fig. 4-2 44 459 C1

Top view of overall mechanical condition

### 4.1 Assembly procedures of sub cam gear, ring gear and detent arm

- Install ring gear pos. no. 120(2) so that the hole on ring gear is exactly in line with the hole of chassis as shown in Fig. 4-3.
- Install sub cam gear pos. no. 112(2) so that the hole on sub cam gear is exactly in line with the hole on chassis, at the same time, the small hole (located just outside of large hole) on sub cam gear is exactly in line with the hole on ring gear.
- Install detent arm, pos. no. 110(2).

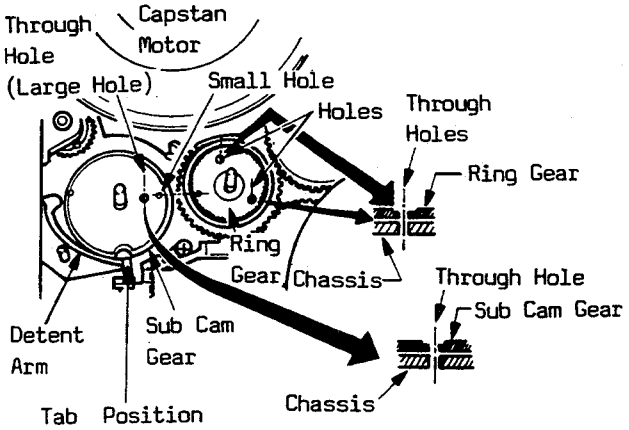



Fig.4-3

### 4.2 Assembly procedures of main cam gear and pinch speed down gear

- Install pinch speed down gear pos. no. 64(1) from top side of chassis.
- Install main cam gear pos. no. 111(2) on to sub cam gear pos. no. 112(2) so that the small hole on main cam gear is exactly in line with the small hole of pinch speed down gear.
  And the large hole on main cam gear is exactly in line with the large hole of sub cam gear and the hole on the chassis, as shown in Fig. 4-4.
  To facilitate aligning the three holes use a small hex wrench or a matal pin.

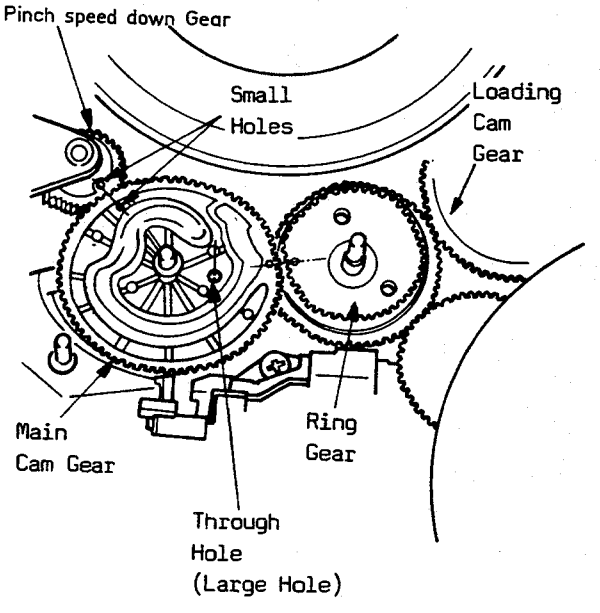



Fig.4-4

### 4.3 Assembly procedures of loading cam gear and retainer gear

- Install loading cam gear pos. no. 142(2) so that the end of sub loading arm pos. no. 39(1) comes to rift A of loading cam gear as shown in Fig. 4-5.

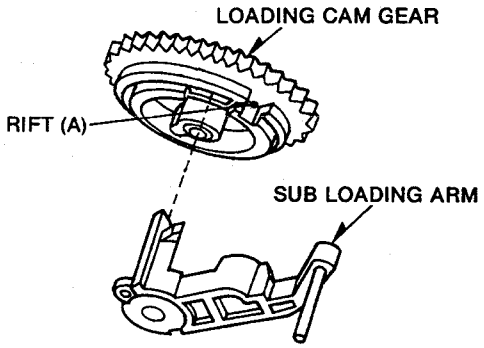



Fig.4-5

- Install retainer gear pos. no. 114(2) on to the ring gear so that the hole of the retainer gear is exactly in line with the hole of main cam gear, at this time, this hole of retainer gear also is exactly in line with the hole of ring gear, and the hole on the chassis.
  Now, another hole of retainer gear is exactly in line with the hole of loading cam gear as shown in Fig. 4-6.
  To facilitate aligning the holes use a small hex wrench or a matal pin.

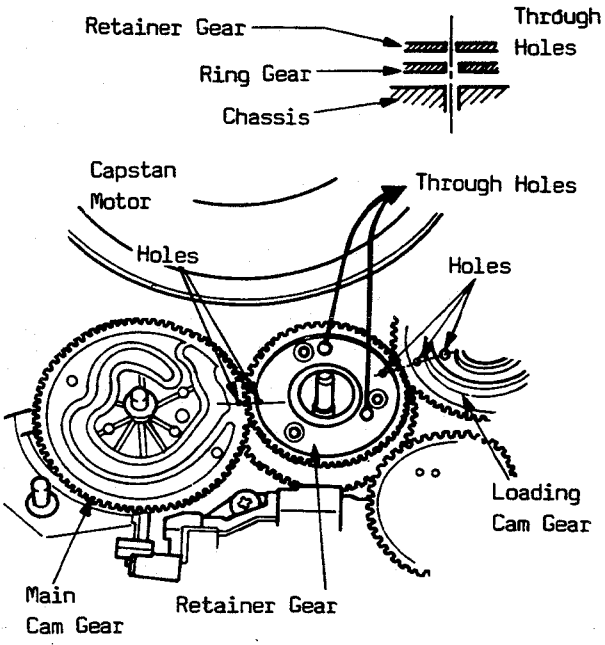



Fig.4-6

### 4.4 Assembly procedures of centre gear

- Install centre gear pos. no. 113(2) on to retainer gear pos. no. 114(2) so that the hole of centre gear is exactly in line with the hole of retainer gear, ring gear and the hole in the chassis, see Fig. 4-7. At this time, another hole of the centre gear is exactly in line with the small hole of clutch disk pos. 116(2), see Fig. 4-7. then insert cut washer pos. no. 100(2).

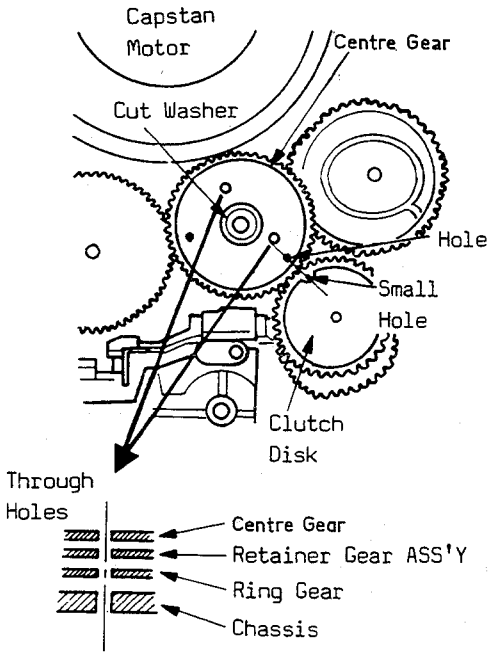



Fig.4-7 44 484 B11

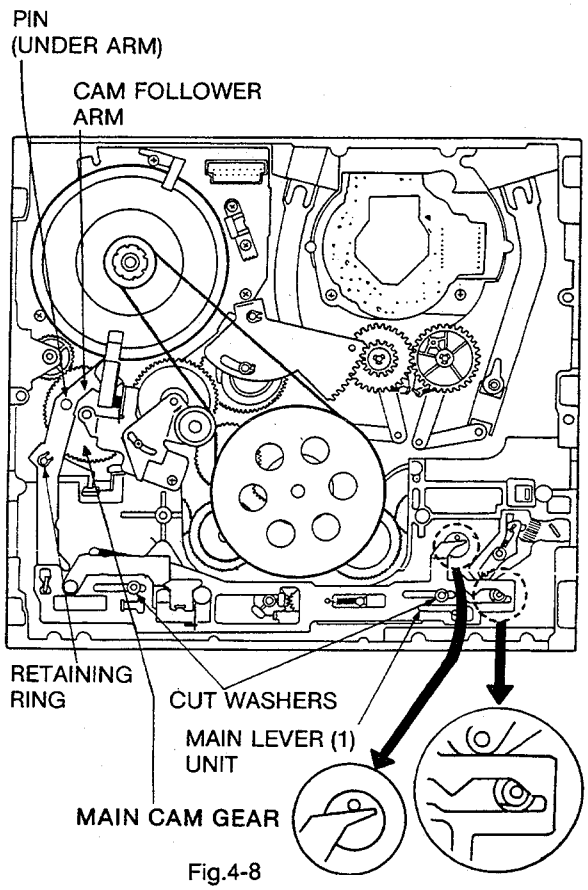



Fig.4-8

**4.5 Assembly procedures of main lever (1) unit and cam follower arm unit**

- Install cam follower arm unit pos. no. 109(2) so that the pin of cam follower arm insert to the groove of main cam gear then insert a retaining ring (5322 530 74076).
- Install main lever unit (1) pos. no. 103(2) unit and then insert cut washers pos. no. 100(2) as shown in Fig. 4-8.

**4.6 Assembly procedures of loading gear (T), loading gear (S) sector gear and tension roller**

- Set the P2 and P3 posts to unloading position, then install the loading gear (T) pos. no. 138(2) and (S) pos. no. 143(2) so that the hole of loading gear (T) is exactly in line with the hole of loading gear (S), see Fig. 4-9.
- Install sector gear pos. no. 141(2) so that the hole of sector gear is exactly in line with the projection mark on loading gear (T). Then insert the retaining rings.
- Install tension roller unit pos. no. 108(12) and SS brake unit pos. no's 105-107, then tighten the screws.

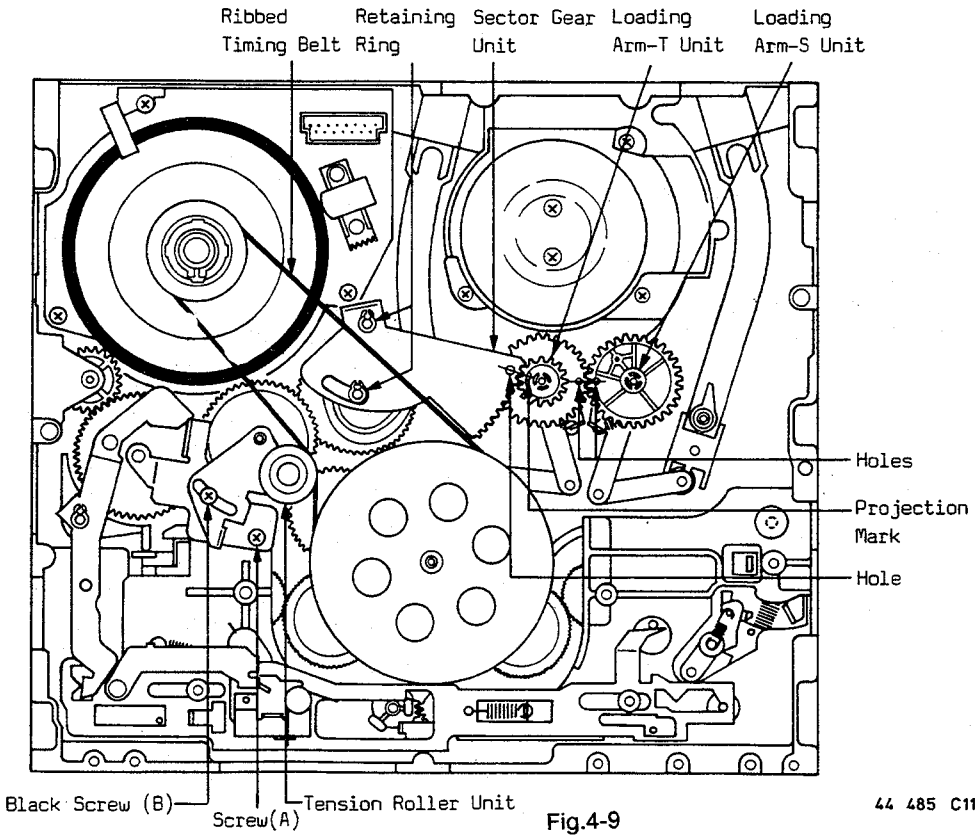



Fig.4-9 44 485 C11

### 4.7 Assembly procedures of connection gear

*Note:*
Before this alignment, sub cam gear position (and positions of bottom side gears) must be in their correct alignment position for STOP mode as previously described.
Push down to seat the sector gear.
Install the connection gear pos. no. 65(1) so that the small hole of connection gear is exactly in line with the small hole of sub cam gear as shown in Fig. 4-10.

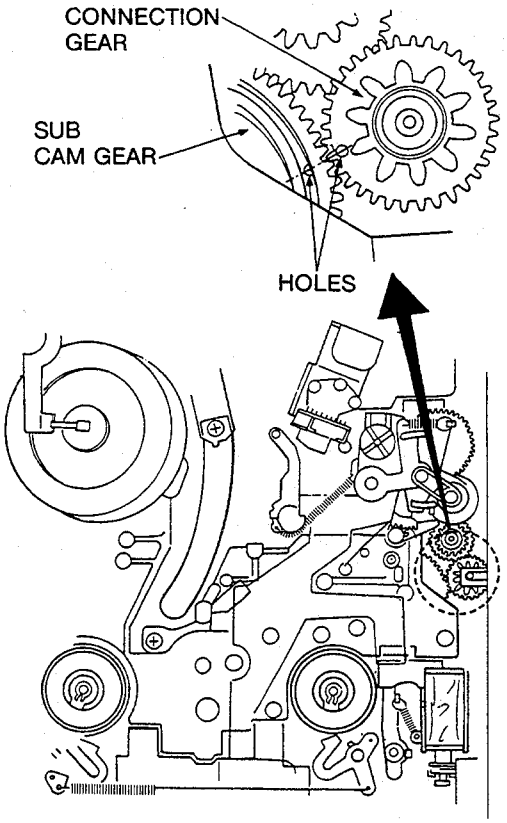



Fig.4-10

### 4.8 Assembly procedures of mode select switch and P5 pull out sector gear

- Install mode select switch pos. no. 55(1) and tighten the screw, then solder the 5 solder portions.
- Install the P5 pull out sector gear so that the hole of the P5 pull out sector gear aligns with the cog of edge at P5 gear as shown in Fig. 4-11.

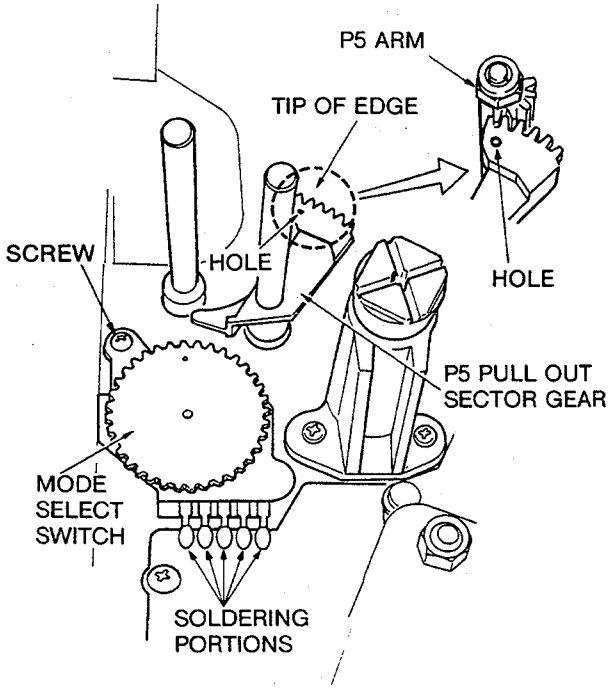



Fig.4-11

### 4.9 Assembly procedures of pinch cam and pressure roller unit

- Push P5 arm unit clockwise until it stops and hold it in this position.
- install pinch cam pos. no. 51(1) so that the edge of P5 arm comes into the rift of pinch cam and the projection of pinch cam is exactly in line with the hole of pinch speed down gear, at this time, the hole of mode select switch pos. no. 55(1) is exactly in line with the hole of pinch cam as shown in Fig. 4-12.
- Install the pressure roller unit, then install the pinch cam cap.

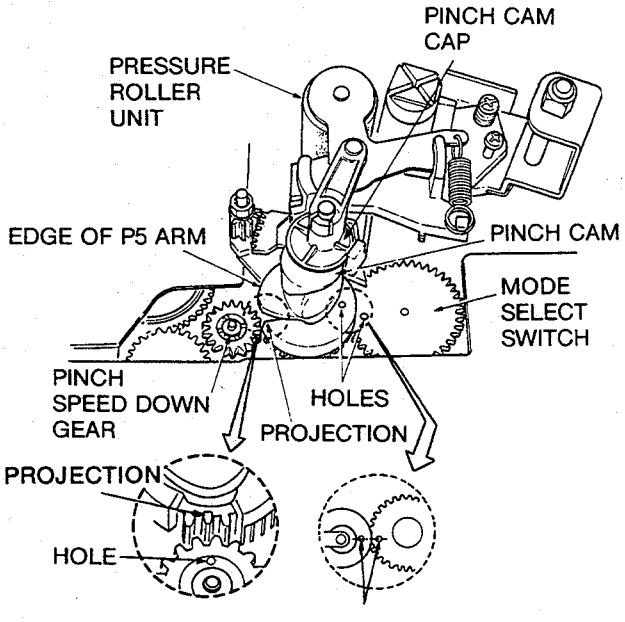



Fig.4-12

## 4.10 REINSTALLATION OF CASSETTE COMPARTMENT

When re-installing the cassette compartment, mechanical adjustment (alignment) should be performed for proper operation as follows.
And than, before reinstalling the cassette compartment ensure wiper arm (R) is aligned as shown in box, Fig. 4-13.

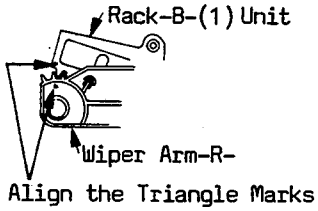



Fig.4-13

### A. Reinstalling the cassette compartment from EJECT position

1. Press the change lever pos. 122(2) to the direction indicated by arrow as shown in Fig. 4-14 (to release the lock).
2 Turn the capstan motor or centre pulley counter clockwise until the mechanism is placed fully into te EJECT position and maintain this position.

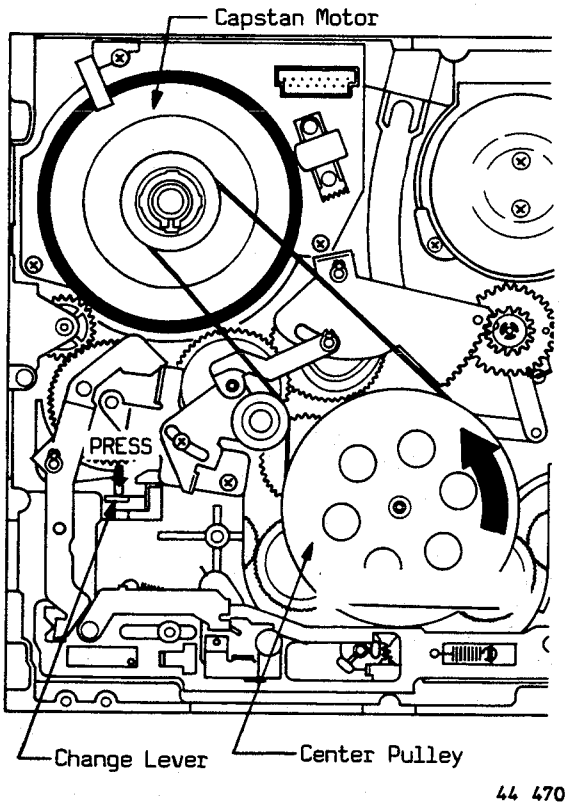



Fig.4-14

3. Memorize the position of the marking or hole on the connection gear (located on top right side, as shown in Fig. 4-15). Turn the capstan motor clockwise while watching the connection gear so that marking or hole of the connection gear rotates one revolution.

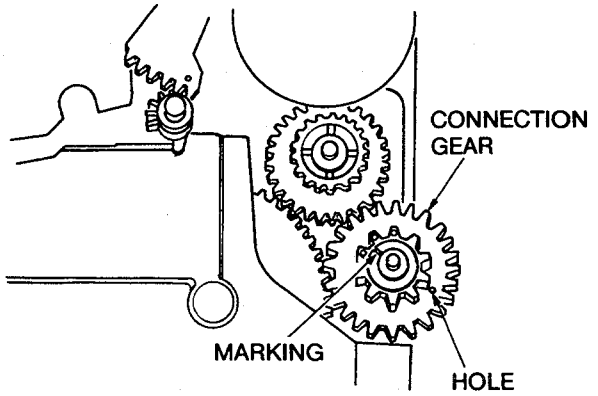
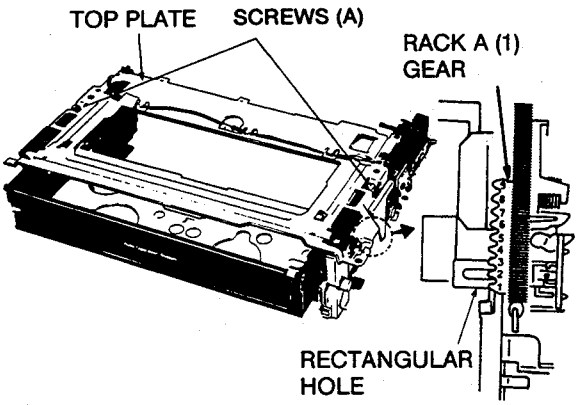



Fig.4-15

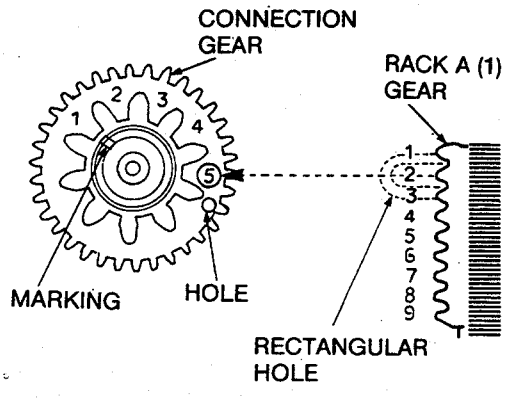
4. Slide the cassette holder (with wiper arm (R), see Fig. 4-20) just a little so that the second tooth of rack A (1) gear (located on the bottom side of cassette compartemt) comes to center of the rectangular hole as shown in Fig. 4-16

5. Remove the 2 screws (A) and carefully remove the top plate form the cassette compartment (so connection gear and rack A (1) gear can be seen when reinstalling). Fig. 4-16 shows the bottem view of the cassette compartment.

6. Slowly install the cassette compartment to chassis so that the second tooth of rack a (1) gear fits into the fifth slot of the conection gear as shown in Fig. 4-17. If it does not fit, slide the cassette holder a little bit to mesh the gear teeth.




Bottem view of cassette compartment
Fig. 4-16




Top view of cassette compartment

7. Reinstall the top plate and tighten the 2 screws (A), then tighten the 4 screws (B) and (C) as shown in Fig. 4-18
   Re–connect the flexible cable to P1508.

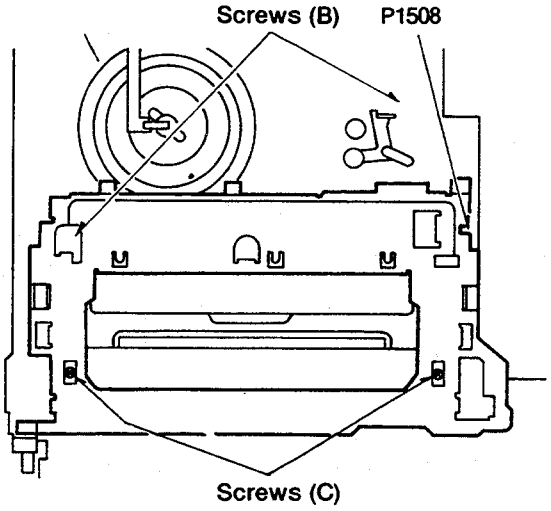



Fig. 4-18

*Note:*
If mechanism doesn't work correctly, carefully repeat above procedure of chapter 4.10 "Reinstallation of cassette compartment".

**B. Reinstallation of cassette compartment from STOP (FF/REW) position**

1. Set the mechanism into STOP (FF/REW) position by means of turning the capstan motor (refer to chapter 1.5).
2. Remove the 2 screws (A) as shown in Fig. 4-16.
3. Take the top plate out.
4. Take out the cassette holder unit as shown in Fig. 4-19.

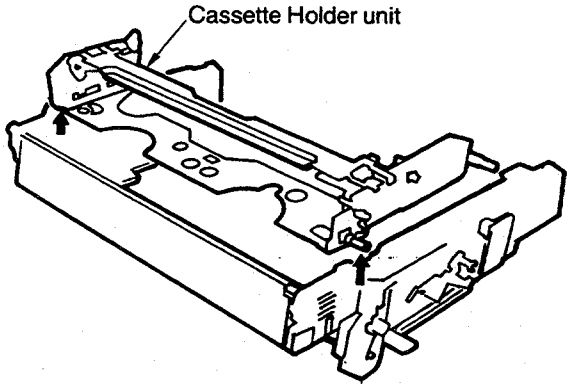



Fig. 4-19

5. Press the sub wiper arm (R) to direction indicated by the arrow as shown in Fig. 4-20 so that the sub wiper arm (R) comes to cassette down position completely and hold this position.

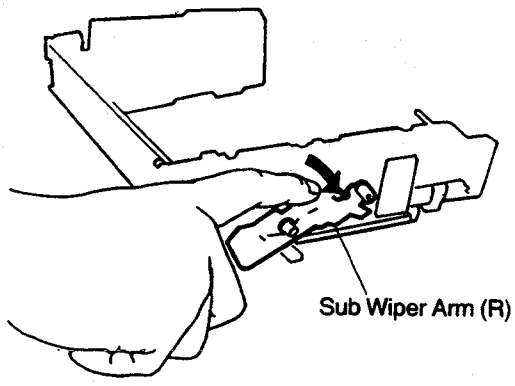



Fig. 4-20

6. Reinstall the cassette compartment (without cassette holder) to chassis so that the first tooth of rack gear A (1) aligns with the marking slot of the connection gear as shown in Fig. 4-21
7. Tighten the 4 screws (D) as shown in Fig. 4-22.
8. Press the change lever and turn the capstan motor counter clockwise until the mechanism is placed in the EJECT position as shown in Fig. 4-14.
9. Reinstall the cassette holder unit in the reverse order of item 4, Fig. 4-19.
10. Reinstall the top plate in the reverse order of item 3, Fig. 4-16.

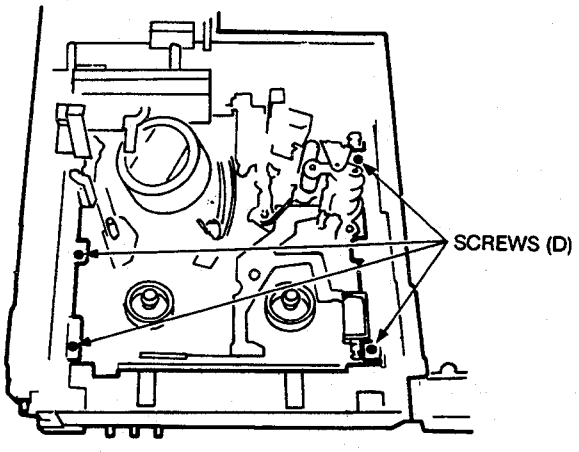



Fig. 4-22

Fig. 4-23 shows the right side of the cassette compartment, with alignments marks

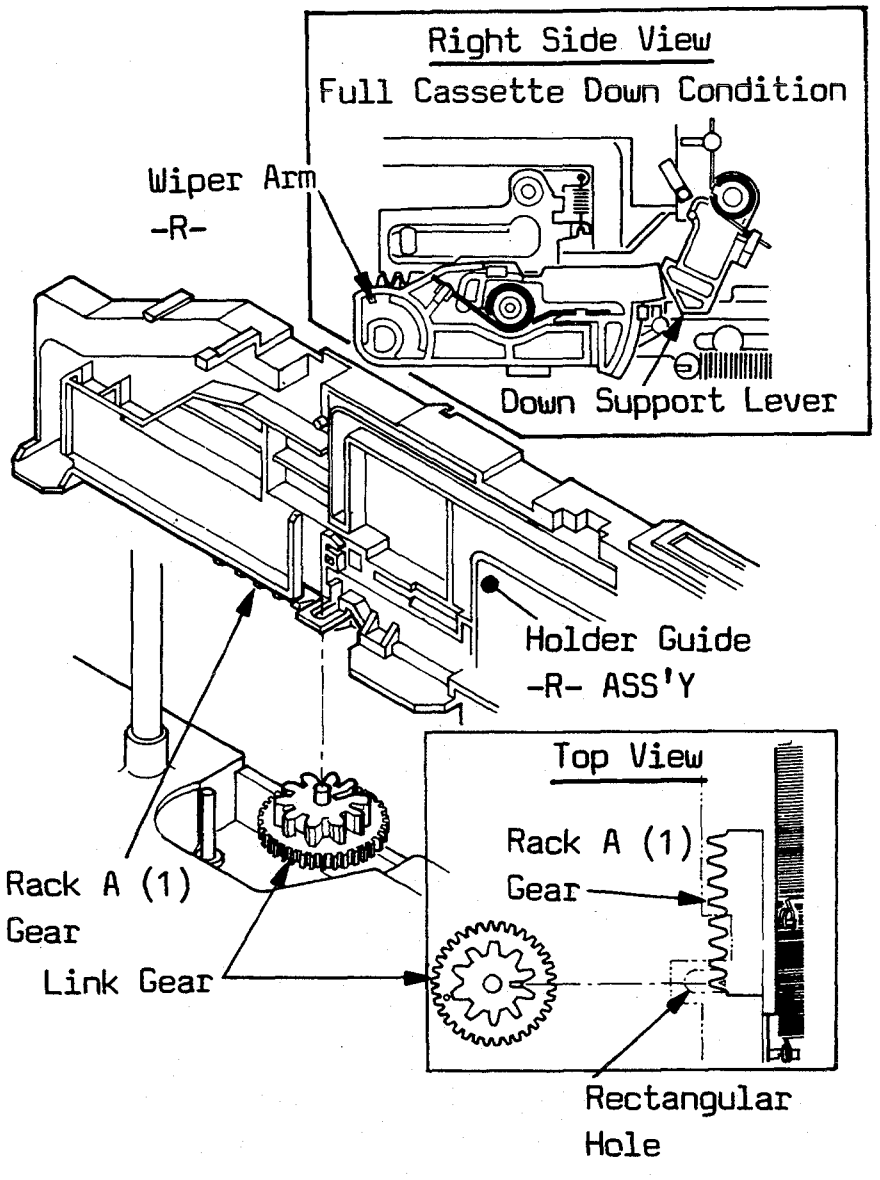
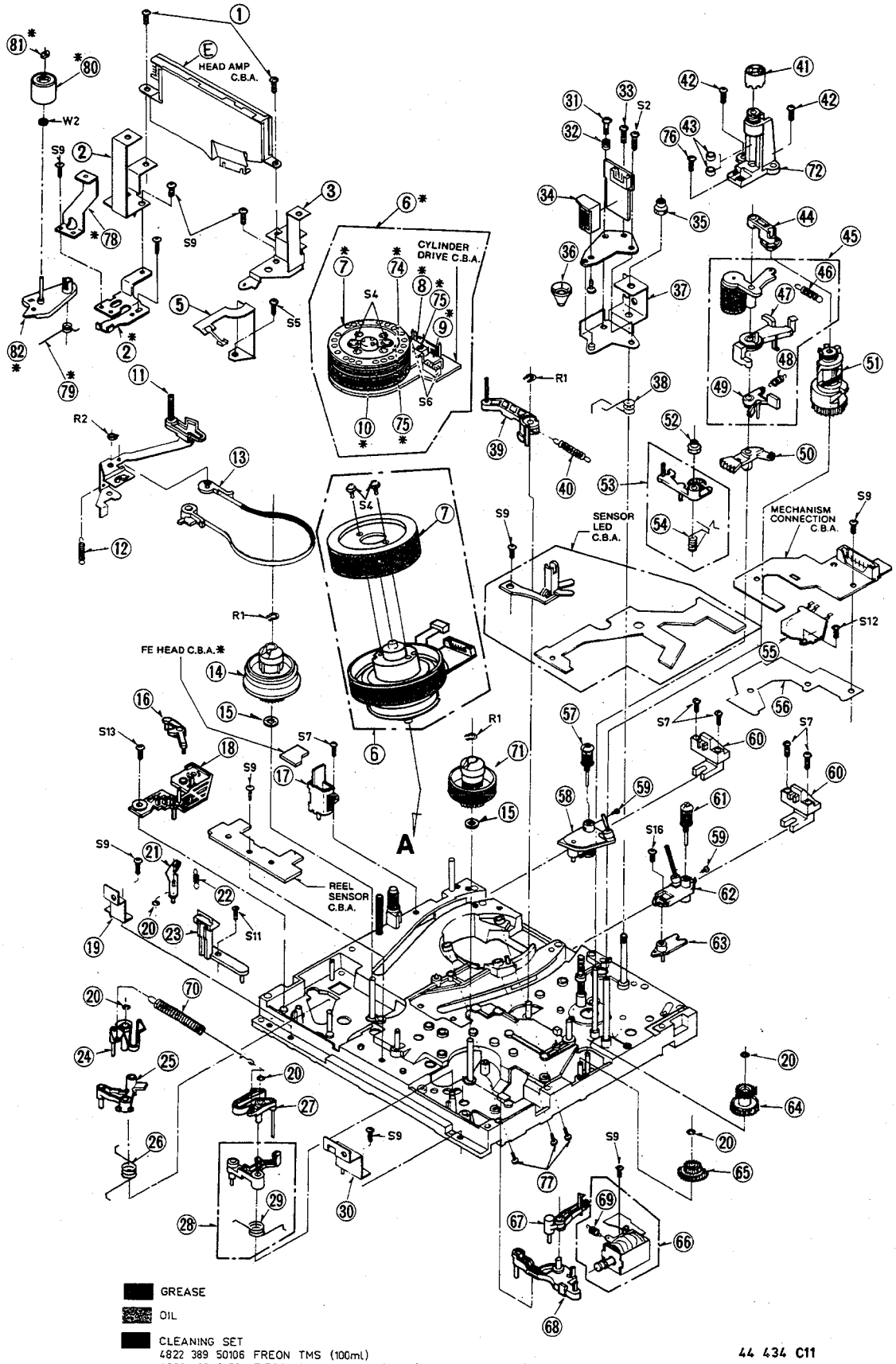

Right Side View
Full Cassette Down Condition
Wiper Arm
-R-
Down Support Lever
Holder Guide
-R- ASS'Y
Top View
Rack A (1)
Gear
Rack A (1)
Gear
Link Gear
Rectangular
Hole

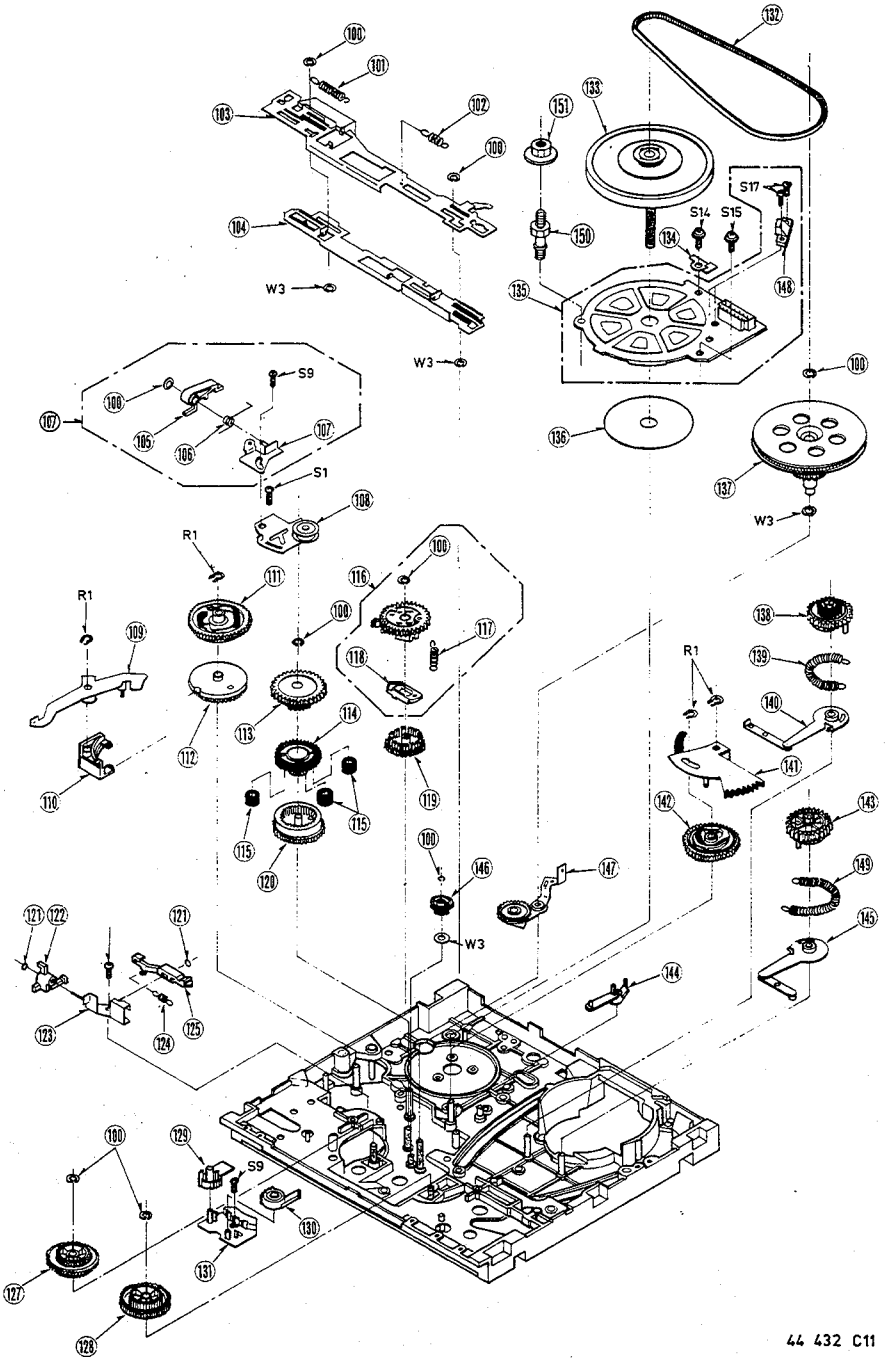
Fig.4-21

## 5. EXPLODED VIEWS AND PARTSLIST

### 5.1 Exploded view 1 (top view)



## 5.2 Exploded view 2 (bottom view)

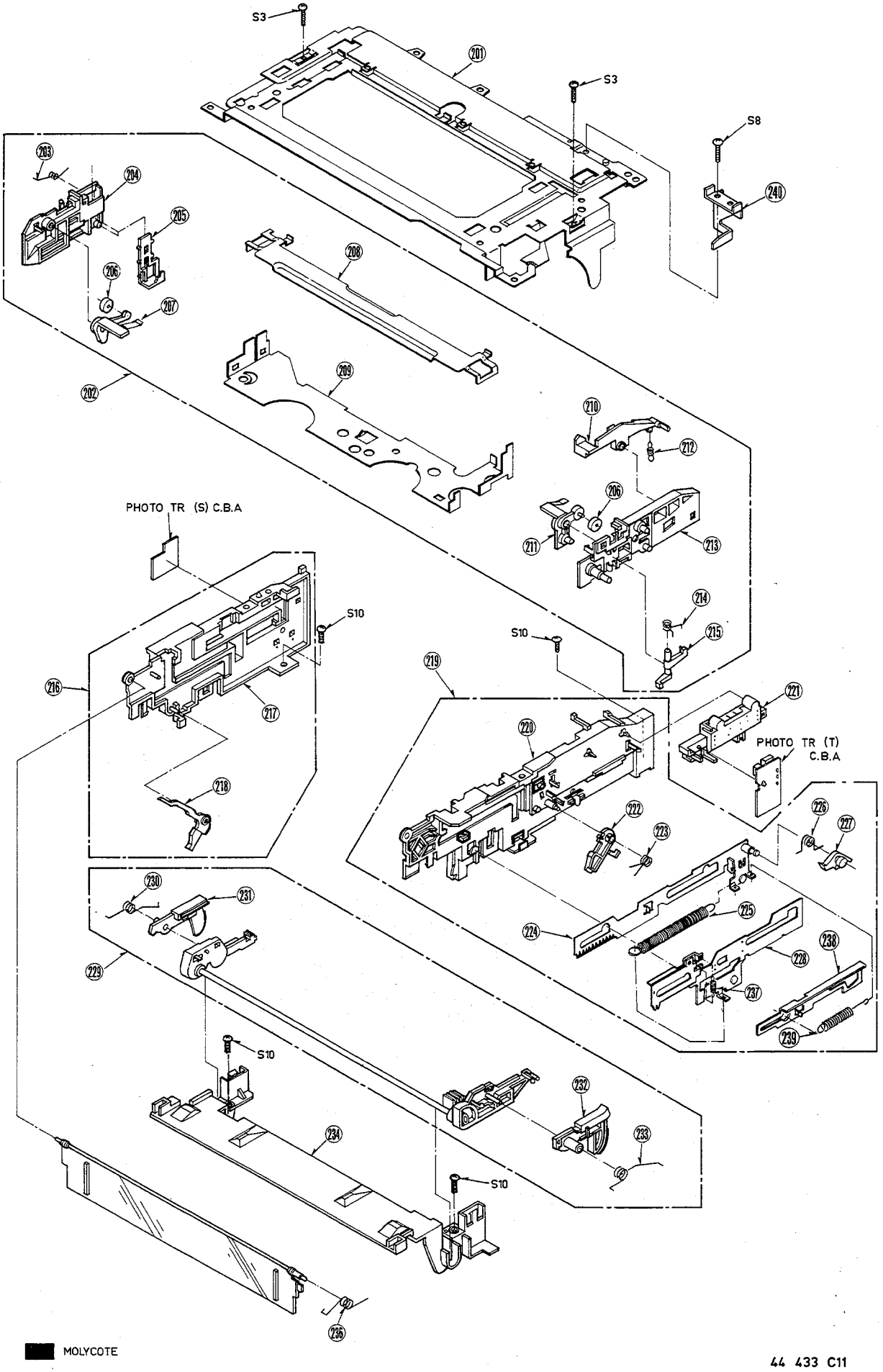



GREASE

OIL

CLEANING SET
4822 389 50106 FREON TMS (100ml)
4822 466 91591 FIBRE TISSUE (10pcs)

## 5.3 Exploded view 3 (cassette-compartiment)




MOLYCOTE

44 433 C11

**5.4 Partslist**

| | | |
|---|---|---|
| 1(1) | 4822 502 13241 | Screw |
| 2(1) | 4822 403 53564 | Mount angle (L) |
| 2(1) | 4822 403 53724 | Mount angle (L) (***) |
| 3(1) | 4822 403 53565 | Mount angle (R) |
| 5(1) | 4822 466 82418 | Earth plate |
| 5(1) | 4822 403 53727 | Earth plate |
| 6(1) | 4822 691 20499 | Scanning unit (*) |
| 6(1) | 4822 691 20508 | Scanning unit (**) |
| 6(1) | 4822 691 20505 | Scanning unit (***) |
| 6(1) | 4822 361 21264 | Scanning unit (#) |
| 6(1) | 4822 361 21263 | Scanning unit (##) |
| 7(1) | 4822 691 20501 | Upper cylinder (*) |
| 7(1) | 4822 691 20509 | Upper cylinder (**) |
| 7(1) | 4822 691 20506 | Upper cylinder (***) |
| 7(1) | 4822 691 20527 | Upper cylinder (#) |
| 7(1) | 4822 691 20528 | Upper cylinder (##) |
| 8(1) | 4822 259 90132 | Element (***) |
| 9(1) | 4822 403 53723 | Main holder (***) |
| 10(1) | 4822 466 82419 | Cover (***) |
| 11(1) | 4822 403 53614 | Tension arm |
| 12(1) | 4822 492 32912 | Tension spring |
| 13(1) | 4822 401 11201 | Tension band |
| 14(1) | 4822 528 10717 | Suppy reel |
| 15(1) | 4822 532 52057 | Reel washer (0,2mm) |
| 15(1) | 4822 532 52058 | Reel washer (0,3mm) |
| 15(1) | 4822 532 52055 | Reel washer (0.5mm) |
| 16(1) | 4822 403 53615 | Tension release arm |
| 17(1) | 4822 249 20076 | FE head |
| 18(1) | 4822 403 53605 | Tansion arm base |
| 19(1) | 4822 403 53562 | Mount angle (L) |
| 20(1) | 4822 532 52054 | Cut washer |
| 21(1) | 4822 403 53616 | Release arm |
| 22(1) | 4822 492 32916 | Release spring |
| 23(1) | 4822 271 30638 | Safety switch |
| 24(1) | 4822 403 53622 | Main brake unit (S) |
| 25(1) | 4822 403 53621 | Soft brake unit (S) |
| 26(1) | 4822 492 42296 | Spring |
| 27(1) | 4822 403 53623 | Take up main brake (T) |
| 28(1) | 4822 403 53619 | Take up soft brake (T) |
| 29(1) | 4822 492 42295 | Spring |
| 30(1) | 4822 403 53563 | Mount angle (R) |
| 31(1) | 4822 502 13168 | Adjust screw |
| 32(1) | 4822 492 52043 | Adjust spring |
| 33(1) | 4822 502 11834 | Azimuth adjust screw |
| 34(1) | 4822 249 10373 | A/C head |
| 35(1) | 4822 505 10945 | Nut (nylon) |
| 36(1) | 4822 505 10944 | Adjust nut |
| 37(1) | 4822 403 53601 | Head base unit |
| 38(1) | 4822 492 42297 | A/C head spring |
| 39(1) | 4822 403 53608 | Sub loading arm |
| 39(1) | 4822 403 53842 | Sub loading arm (#)(##) |
| 40(1) | 4822 492 32907 | Sub post spring |
| 41(1) | 4822 502 13171 | Thrust screw |
| 42(1) | 4822 502 13167 | Housing screw |
| 43(1) | 4822 532 52053 | Oil seal |
| 44(1) | 4822 403 53596 | Pinch cam cap |
| 45(1) | 4822 528 81245 | Pressure roller |
| 46(1) | 4822 492 32914 | Pin pressure spring |
| 47(1) | 4822 403 53582 | Pinch lift arm |
| 48(1) | 4822 492 32915 | Release spring |
| 49(1) | 4822 403 53583 | Pinch lift arm |
| 50(1) | 4822 522 32522 | P5 sector gear |
| 51(1) | 4822 522 32525 | Pinch cam |
| 52(1) | 4822 505 10737 | Nut (nylon) |
| 53(1) | 4822 403 53609 | P5 unit |
| 54(1) | 4822 492 70088 | P5 spring |
| 55(1) | 4822 276 12496 | Mode switch |
| 56(1) | 4822 403 53597 | Shield plate |
| 56(1) | | not for (#)(##)!! |
| 57(1) | 4822 528 90699 | Roller post unit |
| 58(1) | 4822 256 91349 | Inclind base (S) |
| 59(1) | 4822 502 11831 | Roller post screw |
| 60(1) | 4822 403 53571 | post stopper |
| 61(1) | 4822 528 90698 | Roller post unit |
| 62(1) | 4822 403 53602 | Inclind base (T) |
| 63(1) | 4822 466 82389 | Adjust plate |
| 64(1) | 4822 522 32529 | Pinch speed down gear |
| 65(1) | 4822 522 32512 | Connection gearrad |
| 66(1) | 4822 526 20151 | Solenoid unit |
| 67(1) | 4822 403 53603 | Kick rod unit |
| 68(1) | 4822 403 53569 | Solenoid lever |
| 69(1) | 4822 492 32908 | Kick rod spring |
| 70(1) | 4822 492 32913 | Main brake spring |
| 71(1) | 4822 528 10718 | Take up reel table |
| 72(1) | 4822 691 20483 | Housing unit |
| 74(1) | 4822 255 40929 | Cooling block (***) |
| 75(1) | 4822 502 13242 | Screw (***) |
| 76(1) | 4822 502 13169 | Screw |
| 77(1) | 4822 502 13243 | Screw (***) |
| 78(1) | 4822 403 53725 | Mount angle(***) |
| 79(1) | 4822 492 42324 | Spring (***) |
| 80(1) | 4822 528 70578 | Impedance rolle (***) |
| 81(1) | 4822 530 70449 | Stopper (***) |
| 82(1) | 4822 403 53728 | Impedance roller arm (***) |
| 83(1) | 4822 492 70087 | Spring (***) |
| 100(2) | 4822 532 52054 | Cut washer |
| 101(2) | 4822 492 32917 | Release spring |
| 102(2) | 4822 492 70085 | Lever spring |
| 103(2) | 4822 403 53604 | Main lever |
| 104(2) | 4822 403 53594 | Sub lever |
| 105(2) | 4822 403 53617 | SS brake unit (*,**,***) |
| 106(2) | 4822 492 42303 | SS brake spring (*,**,***) |
| 107(2) | 4822 403 53598 | SS brake base (*,**,***) |
| 107(2) | 4822 403 53843 | SS brake base(#)(##) |
| 108(2) | 4822 528 90697 | Tension roller |
| 109(2) | 4822 403 53618 | Cam follower arm |
| 110(2) | 4822 403 53581 | Detent arm |
| 111(2) | 4822 522 32518 | Main cam gear |
| 112(2) | 4822 522 32516 | Sub cam gear |
| 113(2) | 4822 522 32519 | Centre gear |
| 114(2) | 4822 522 32526 | Retainer gear |
| 115(2) | 4822 522 32517 | Planet gear |
| 116(2) | 4822 522 32521 | Clutch disk (*,**,***) |
| 116(2) | 4822 522 32792 | Clutch disk (#)(##) |
| 117(2) | 4822 492 32911 | Clutch spring (*,**,***) |
| 118(2) | 4822 403 53561 | Lock slide gear (*,**,***) |
| 119(2) | 4822 522 32513 | Drive disk |
| 120(2) | 4822 522 32515 | Ring gear |
| 121(2) | 4822 532 52052 | Cut washer |
| 122(2) | 4822 403 53578 | Change lever |
| 123(2) | 4822 403 53599 | Release lever |
| 124(2) | 4822 492 32909 | Release spring |
| 125(2) | 4822 403 53579 | Release lever |
| 127(2) | 4822 522 32532 | Take up real gear (T) |
| 128(2) | 4822 522 32527 | Supply up real gear (S) |
| 129(2) | 4822 403 53577 | Return lever (R) |
| 130(2) | 4822 403 53576 | Return lever (L) |
| 131(2) | 4822 403 53572 | Stopper base |
| 132(2) | 4822 358 30881 | Timing belt |
| 133(2) | 4822 691 20484 | Rotor unit |
| 134(2) | 4822 403 53568 | Rotor stopper |
| 135(2) | 4822 691 20482 | Stator unit |
| 136(2) | 4822 466 92285 | Sub plate |
| 137(2) | 4822 528 81246 | Centre pulley |
| 138(2) | 4822 522 32524 | Loading gear (T) |
| 139(2) | 4822 492 32923 | Loading spring |

| | | |
|---|---|---|
| 140(2) | 4822 403 53612 | Loading arm (T) |
| 141(2) | 4822 522 32531 | Sector gear |
| 142(2) | 4822 522 32528 | Loading cam gear |
| 143(2) | 4822 522 32523 | Loading gear (S) |
| 144(2) | 4822 403 53575 | Play control arm |
| 145(2) | 4822 403 53611 | Loading arm (S) |
| 146(2) | 4822 522 32514 | Intermediate gear |
| 147(2) | 4822 403 53613 | Play–arm (*,**,***) |
| 147(2) | 4822 403 53841 | Play–arm (#)(##) |
| 148(2) | 4822 249 20075 | FG head |
| 149(2) | 4822 492 32918 | Loading spring |
| 201(3) | 4822 443 30737 | Top plate |
| 202(3) | 4822 256 91348 | Cassette holder (*,**,***) |
| 202(3) | 4822 256 91536 | Cassette holder (#)(##) |
| 203(3) | 4822 492 42299 | Mount lever spring (*,**,***) |
| 204(3) | 4822 403 53573 | Holder guide (L) (*,**,***) |
| 205(3) | 4822 403 53595 | Mount lever (*,**,***) |
| 206(3) | 4822 528 90696 | Roller (*,**,***) |
| 207(3) | 4822 403 53589 | Pressure lever (L) (*,**,***) |
| 208(3) | 4822 403 53567 | Holder angle (*,**,***) |
| 209(3) | 4822 403 53566 | Cassette holder (*,**,***) |
| 210(3) | 4822 403 53588 | Opener lever (*,**,***) |
| 211(3) | 4822 403 53591 | Pressure lever (R) (*,**,***) |
| 212(3) | 4822 492 70086 | Lever spring (*,**,***) |
| 213(3) | 4822 403 53574 | Holder guide (R) (*,**,***) |
| 214(3) | 4822 492 42302 | Release spring (*,**,***) |
| 215(3) | 4822 403 53587 | Release lever (*,**,***) |
| 216(3) | 4822 443 40718 | Side plate (L) |
| 217(3) | 4822 443 40716 | Side plate (L) |
| 218(3) | 4822 403 53586 | Opener lever |
| 219(3) | 4822 443 40719 | Side plate (R) (*,**) |
| 219(3) | 4822 691 20507 | Side plate (R) (***) |
| 219(3) | 4822 443 40817 | Side plate (#)(##) |
| 220(3) | 4822 443 40717 | Side plate (R) (*,**,***) |
| 221(3) | 4822 277 21257 | Slide switch |
| 222(3) | 4822 403 53593 | Down support lever (*,**,***) |
| 223(3) | 4822 492 42301 | Down support spring (*,**,***) |
| 224(3) | 4822 403 53607 | Rack (A) (*,**,***) |
| 225(3) | 4822 492 32919 | Clutch spring (*,**,***) |
| 226(3) | 4822 492 42304 | Lock spring (*,**,***) |
| 227(3) | 4822 403 53592 | Lock lever(*,**,***) |
| 228(3) | 4822 403 53606 | Rack (B) (*,**,***) |
| 229(3) | 4822 535 92528 | Main shaft |
| 230(3) | 4822 492 42298 | Wiper spring (L) |
| 231(3) | 4822 403 53584 | Wiper arm (L) |
| 232(3) | 4822 403 53585 | Wiper arm (R) |
| 233(3) | 4822 492 42306 | Wiper spring |
| 234(3) | 4822 403 53626 | Cassette guide |
| 235(3) | 4822 443 62697 | Cassette cover(***) |
| 236(3) | 4822 492 42305 | Blinder spring |
| 237(3) | 4822 492 32922 | Rack (C) spring (*,**,***) |
| 238(3) | 4822 403 53628 | Connection rod (*,**,***) |
| 239(3) | 4822 492 32921 | Rod spring (*,**,***) |
| 240(3) | 4822 403 53627 | Cassette holder angle |

**Fixing material**

**Screws**

| | |
|---|---|
| S(1) | 4822 502 13217 |
| S(2) | 4822 502 11283 |
| S(3) | 4822 502 30531 |
| S(4) | 4822 502 30552 |
| S(5) | 4822 502 30553 |
| S(6) | 4822 502 30551 |
| S(7) | 4822 502 30556 |
| S(8) | 4822 502 30557 |
| S(9) | 4822 502 11968 |
| S(10) | 4822 502 30559 |
| S(11) | 4822 502 30558 |
| S(12) | 4822 502 30554 |
| S(13) | 4822 502 30555 |
| S(14) | 4822 502 30562 |
| S(15) | 4822 502 30561 |
| S(16) | 4822 502 13219 |
| S(17) | 4822 502 13218 |

**Retaining rings**

| | |
|---|---|
| R(1) | 5322 530 74076 |
| R(2) | 4822 530 70122 |

**Washers**

| | |
|---|---|
| W(1) | 4822 532 11703 |
| W(2) | 4822 532 11704 |
| W(3) | 4822 532 11705 |

**Circuit board assemblies (C.B.As)**

| | |
|---|---|
| Mechanism connection C.B.A. | 4822 214 32534 (*,**)(#,##) |
| Mechanism connection C.B.A. | 4822 214 52531 (***) |
| Sensor LED C.B.A. | 4822 214 32536 |
| Sensor LED C.B.A. | 4822 214 32532 NOT for (***) |
| Tacho circuit board | 4822 214 32535 (***) |
| Tacho circuit board | 4822 214 32543 NOT for (***) |
| Tacho circuit board | 4822 214 32541 (***) |
| Erasehead circuit board | 4822 214 32508 (***) |
| Control circuit head servo | 4822 214 32509 (***) |

* only for DM 4/0
** only for DM 4/2
*** only for DMS 4/2

\# only for DMP 4/0
## only for DMP 4/2